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AN EVALUATION OF THE ALBERTA HIGH SCHOOL EQUIVALENCY PROGRAM

by

© BARRY CLARENCE CARBOL

A THESIS
SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE
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External Examiner

Date April 12 1985

ABSTRACT

This study was designed to describe and evaluate the Alberta High School Equivalency Program (AHSEP), a program designed to assist adults not possessing a high school diploma in acquiring one. Two program options are available to eligible adults - the GED Test Program and an alternative route that considers a number of educationally-relevant, personal factors. Using Rossi and Freeman's (1982) program evaluation framework as a guide for the study, questions related to three general evaluation areas were asked: the design and conceptualization of the program, the monitoring of the program's operation, and the assessment of the utility of the program. A variety of data collection techniques and multivariate and univariate analytic procedures were used in the study.

An absence of goals, objectives, and statements of rationale for the AHSEP was revealed. It was possible, however, to reconstruct the events in the policy development process of the AHSEP. This reconstruction revealed some common misconceptions and differences of opinion on the part of government officials concerning the meaning of the term 'equivalency.' These findings suggested that the philosophical basis of the equivalency program needs consideration.

The GED tests were found to be technically adequate measures of high school equivalency. In general, the performance of GED candidates on the tests was found to be satisfactory. Criteria for acquiring an equivalency diploma by the alternate route of the AHSEP have been applied uniformly but several changes were considered necessary in the credit categories. The characteristics of program applicants, as revealed through a stratified, random sample survey of 200 successful GED candidates, 200 non-successful GED candidates, and 200 non-GED program applicants, were found to be similar to the characteristics of participants in other equivalency programs. Discrepancies between the prior expectations of program applicants and perceived benefits after participating in the AHSEP were found for all three groups. Age appeared to differentiate GED candidates in terms of their performance on the GED tests.

Surveys and interviews of Alberta employers demonstrated a willingness on the part of this group to accept the equivalency credential. At the same time, however, the credential was considered to be but one of a number of criteria used in the hiring process. A similar survey of 19 Alberta post-secondary institutions revealed some hesitancy concerning their acceptance of the equivalency credential. Information concerning the predictive validity of the GED tests within the Alberta context is required by these institutions before the credential is generally accepted. A comparison of the AHSEP with a similar program in operation in Manitoba suggested no major differences between the two programs along the program dimensions considered.

In summary, the AHSEP was found to be a worthwhile program in the eyes of program participants. Evidence from Alberta's employers and post-secondary institutions and from the participants themselves, however, suggested that the equivalency diploma has had little impact on the employment and further educational situations of Alberta program participants. As a result of the findings and conclusions of the study, program sponsors were invited to consider a number of recommendations for program change and future study.

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CHAPTER I: INTRODUCTION TO THE STUDY

Credentials have increasingly become one of the major foci of educational programs in North America. It is no longer sufficient to say that one possesses certain skills, knowledge, or abilities but that one has a diploma. Nowhere is this assertion truer than in adult education. Where once participants in adult programs were primarily enrolled for the sake of learning or for the uses of learning many adults today are expressing greater interest in the benefits of obtaining a credential (Cross, 1981; Sam, 1979). In part, this attitudinal shift may be seen as a response to what adult learners see around them. To obtain the kinds of jobs and further educational opportunities that people with credentials have, it is necessary to have a credential.

Perhaps the greatest disparity in this regard is felt by those individuals who lack a high school diploma. It is to this group of people and the process by which they are granted high school equivalency credentials that the present study was directed. The program that served as the focus for the study was the Alberta High School Equivalency Program (AHSEP).

The AHSEP was introduced in June 1981 as a joint venture by the two departments responsible for education within the Province of Alberta, Alberta Education and Alberta Advanced Education. Alberta Education is primarily responsible for the delivery and monitoring of programs in the areas of early childhood, elementary, and secondary education while Alberta Advanced Education's primary responsibilities are in post-secondary education. At the present time, two cabinet ministers are responsible for education in Alberta. Prior to 1971, however, the responsibilities of both of the current departments rested with a single government department and, at that time, ultimate educational authority resided with a single cabinet minister.

At the time of its introduction, the AHSEP was seen by its sponsors as a way of providing individuals, who for one reason or another had not completed their formal high school education, with an alternative way of acquiring a high school diploma. The primary assumption underlying the program is that individuals who do not have a high school diploma are at a disadvantage when it comes to employment and educational opportunities. The AHSEP is an attempt to ameliorate this situation.

A. Purpose of the Study

The general purpose of the study was to describe and evaluate the Alberta High School Equivalency Program. As the AHSEP is in its infancy, questions related to the value of the program were considered secondary to those concerned with providing program sponsors with illuminative data on which to base future policy decisions. The research design adopted addressed questions related to:

1. the historical context of the Alberta High School Equivalency Program,
2. program goals, objectives, and rationale,
3. the characteristics of the target population,
4. program acceptance by Alberta's employers and post-secondary institutions,
5. the measurement and assessment of high school equivalency in Alberta,
6. program benefits as perceived by equivalency applicants, and

7. comparisons of the Alberta program with a similar program offered elsewhere in Canada.

B. A Description of the Alberta High School Equivalency Program

1. Program Goals and Objectives

In the broadest sense, the basic goal of the Alberta High School Equivalency Program is to provide adults not possessing a high school credential with assistance in pursuing educational, vocational, or personal goals (Alberta Education, 1984). While no formal statement of objectives is mentioned in the descriptive literature for the AHSEP, it is apparent that the program rests on a set of assumptions that many program administrators appear to have accepted. Perhaps most important to the present evaluation study are the assumptions that (1) the assessment criteria and testing instruments used by Alberta Education to determine equivalency are valid for this purpose, (2) having an equivalency diploma will make adults more acceptable to both employers and post-secondary institutions, and (3) that equivalency program applicants are generally academic failures with low levels of self-esteem.

2. The Target Population

Accurate estimates of the size of the target population of an equivalency program are difficult to make due to the lack of information available on the early school-leaver population. Also, in making estimates, care must be taken when extracting information from government documents that only indirectly detail the demographic characteristics of Canadians who have left school prior to completion. Estimates, based on Statistics Canada (1980) data regarding the educational backgrounds of Canadians, may, nonetheless, be made which suggest that between 40 and 50 percent of all Canadians 16 years-of-age or older (excluding those still in school) do not have a high school diploma. While many of these early school-leavers return to complete their secondary education at a later date, the above estimate implies that there are large numbers of adults who do not possess a high school credential. It may be inferred that in Alberta between 200,000 and 300,000 adults to fit into this category. This rather large group may be considered to be the target population for the AHSEP.

From the inception of the program in June 1981 to December 1983 approximately 6,000 Albertans had applied to the Alberta High School Equivalency Program. This number represented less than one percent of Alberta's adult population and between three and four percent of the estimated target population.

At present, the extent to which adults applying to the program are representative of all adults who qualify for the equivalency program is unknown. Applicant self-selection imposes restrictions on the extent to which the results of this evaluation study may be generalized to the population of all adults who do not have a high school diploma.

The target population is further defined by a set of eligibility criteria outlined by Alberta Education (1984, p. 2). Under these criteria adults are eligible for the AHSEP if they

1. reside in Alberta at the time of application;
2. are 18 years of age or older;
3. have been out of school for at least one year; and
4. have not been issued a high school diploma or its equivalent.

3. Program Options and Background Information

The Alberta High School Equivalency Program provides the applicant with two ways of acquiring an equivalency diploma -- the assessment of a variety of educationally-relevant, personal factors or the writing of the Tests of General Educational Development (GED). The Student Evaluation Branch of Alberta Education is responsible for the administration of both program options. The personal factors assessed are the amount of formal high school classroom instruction received by the applicant, the applicant's age, adult education courses taken, and the extent of travel, reading and private study done by the applicant (see Appendix A for a more complete description of these factors).

The GED Test Program consists of a battery of five examinations - Writing Skills (Test 1), Social Studies (Test 2), Natural Sciences (Test 3), Reading Skills (Test 4), and Mathematics (Test 5). The tests are administered four times a year in 27 writing centres throughout Alberta. A majority of these centres are public post-secondary institutions such as colleges and vocational centres. Educational consortia also participate in the program. Liaison activities between these institutions and Alberta Education are carried out by Alberta Advanced Education which, in part, explains Advanced Education's involvement in a high school equivalency program. The five sub-tests of the GED battery are administered in one session consisting of two sittings. Total testing time is approximately seven hours with sub-tests varying in length from 60 to 90 minutes.

Multiple choice is the only item form used in the test battery. All items provide the examinee with five alternatives. The number of items on each sub-test varies from a low of 40 on the Reading Skills sub-test to a high of 80 on the Writing Skills sub-test. All of the sub-tests are power tests. That is, the sub-tests are designed so that all, or nearly all, of the examinees will have enough time to attempt each of the items on a given sub-test. Examinee responses are machine-scored and reported as standard T-scores (mean = 50, standard deviation = 10). The passing standard in Alberta has been established as a standard score of 45 on each of the five sub-tests of the battery. Applicants meeting this standard are awarded an Alberta High School Equivalency Diploma by Alberta Education.

The GED tests have a lengthy history as measures of high school equivalency. The tests were originally developed in 1942 by the United States Armed Forces Institute to assist American Second World War veterans in pursuing educational, vocational, and personal goals. To a large extent, the GED tests provided veterans with educational opportunities equal to those of individuals who had not had their formal education interrupted by service in the armed forces during the war. The impetus for the development of the tests was the GI Bill, an act of the United States Congress that provided special opportunities for returning service personnel.

Few changes have taken place in the GED tests over the years. GED testing today, however, is open to all adults not possessing a high school diploma in those states and provinces that have adopted the program (American Council on Education, 1981). At the present time, all 50 American states and eight Canadian provinces make use of the GED tests for purposes of assessing high school equivalency. In Canada, the two most-heavily populated provinces, Quebec and Ontario, do not use the battery.

The philosophy behind the development of the GED tests has also remained constant. The American Council on Education, as evidenced by its many publications on the matter, views the tests as a mechanism by which equity of educational and employment opportunity are provided. This equity of opportunity is, in part, ensured, according to GED test developers, through a test development approach that focuses on a selection of general educational skills which all high school graduates are assumed to possess. Neither the test authors nor the American Council on Education make any claims with respect to the validity of the GED tests in relation to a specific course, disciplinary area, or curriculum (Alberta Education, 1984). The GED tests are designed to be norm-referenced measures of general educational development whose purpose is to distinguish those people whose educational development would be equivalent to high school graduates from those whose educational development would not be equivalent. It is inappropriate to label the GED tests, as some authors have, as minimum competency tests. The tests cannot be considered criterion-referenced measures.

The GED testing program has been extremely popular throughout North America since it has been offered to the general population. In the U.S. in 1981, for example, over 800,000 people wrote the GED battery (American Council on Education, 1981). Of this number nearly 500,000 passed the GED tests and received a high school equivalency diploma from the sponsoring state agencies. The latter figure represents 14.9% of all public high school completions in the United States for 1981 (United States Department of Education, 1982).

The Alberta High School Equivalency Program has added to these numbers in recent years. From December 1981 to December 1983, Alberta

Education has awarded over 5,000 equivalency diplomas. Approximately 84% of those receiving equivalency diplomas did so through the GED Test Program.

C. Need for the Study

A preliminary study of the GED Test Program component of the Alberta High School Equivalency Program served, in part, as the basis for an extensive evaluation study of the equivalency program. The preliminary study, conducted in May and June 1983, revealed low levels of awareness of the equivalency program on the part of a sample of Alberta employers which contributed to a corresponding reluctance on their part to accept the equivalency credential. Similarly, many of Alberta's post-secondary institutions were found to be hesitant to accept the equivalency credential.

Of greater concern than the findings of the preliminary study were the questions that arose as a result of the investigation. Registrars and admissions officers from various post-secondary institutions throughout the province were particularly concerned with the nature of the GED tests. They asked questions such as: What do the GED tests measure? How do the GED tests relate to Alberta curricula? Does taking the tests really ensure that the examinee has a standing equivalent to that of a regular high school graduate?

While many of the queries of the registrars and admissions officers were simply requests for information or for clarification, some skepticism concerning the equivalence of the GED test experience and formal educational experience was noted. Remarks by Ulin (1982) capture the flavour of opinions of those surveyed in the preliminary study. With specific reference to the Writing Skills sub-test of the GED battery, Ulin has charged that

> GED test makers have never assessed the writing qua writing of high school graduates and compared it with the actual writing of GED candidates. Nor in any way have they established, either among high schoolers or adult GED candidates, the connection -- or lack of connection -- between the kinds of editing skills the GED measures and bona fide writing skills. (p.24)

It was questions such as those noted above and criticisms such as Ulin's which suggested that further study into the Alberta High School Equivalency Program was needed.

In addition, discussions with Alberta Education officials throughout the course of the preliminary study revealed a number of other questions about the Alberta equivalency program. Of particular note were the following:

1. How valid is the Canadian norming study that was used as the basis for setting Alberta's GED passing score?
2. What are the characteristics of the equivalency program applicants?
3. How does the Alberta High School Equivalency Program compare with programs offered in other provinces?

Clearly in the minds of representatives of post-secondary institutions and Alberta Education officials there existed prior to the present study a wide range of questions concerning the Alberta High School Equivalency Program. After over two years of operation, it appeared that the time was ripe for an extensive evaluation study of the program. The primary beneficiaries of the results of the study were seen to be Alberta Education and Alberta Advanced Education officials who can use the information, analyses, and recommendations of the study as a basis for future policy directions concerning high school equivalency in Alberta. The information gathered as a result of the study was also seen to be of use to Alberta's post-secondary institutions and employers who may be provided with some insights into the nature of the equivalency population. This information could assist institutions and employers in formulating policies relative to individuals possessing equivalency credentials or be of assistance in admission or hiring decisions. It was hoped that graduates of the program ultimately would benefit from the decisions of the groups of individuals outlined above. Finally, since the Alberta situation may be similar to those found elsewhere, information collected here may be of interest to adult educators in other parts of the country.

D. Evaluation Approach

Before outlining the specific evaluation questions that were addressed, it is necessary to describe the evaluation approach that was adopted for the investigation. Any one of a number of approaches could have been selected but the specific evaluation perspective taken recognized the methodological debate that has occurred within the program evaluation literature over the past 25 years.

During the 1960's writers such as Stake, Stufflebeam, Scriven, and Provus concentrated their attention on the development of models that could be used to guide the evaluation of educational programs. In the 1970's the debate shifted from a discussion of models to one of evaluation design. The relative advantages and disadvantages of qualitative and quantitative methods were argued in the evaluation literature adnauseam. Ethnographic, judicial, art criticism, and humanistic methods were advocated as alternatives to the more traditional quantitative approaches of experimentation and quasi-experimentation.

Today it is interesting to find many writers suggesting that program evaluations should be conducted from an eclectic point of view, borrowing from both the qualitative and quantitative research traditions where appropriate. From this perspective the role of models in program evaluation studies has changed from being highly prescriptive, to providing guides to evaluators. In other words, program evaluations, as they are currently conducted, generally follow a broad framework, but tailor specific strategies to suit the social and political context of the programs in question.

After consideration of a number of possible approaches, the evaluation framework presented by Rossi and Freeman (1982) was selected as the guide in formulating the structure of the study. Two interrelated reasons led to this decision. First, this approach emphasizes the need to tailor an evaluation to meet the social context of the program which is being evaluated. Second, it appeared evident from the preliminary investigation of the AHSEP that an equivalency program is more than an educational program. Indeed it could be argued that it has little to do with education at all. It is a certification program, and as such the AHSEP has social implications. The potential benefits that individuals may derive as a result of their participation relate to their status or functioning in society. The Rossi and Freeman evaluation approach is particularly concerned with issues related to the benefits received as a result of participation in some form of social intervention and thus it was felt that it would be appropriate for the present study.

The Rossi and Freeman (1982) evaluation framework recognizes the need to view a program from many angles. First, these authors suggest that program evaluation studies should consider questions that deal with the origins of a program. These questions should be framed in a manner that will provide the evaluator with the opportunity to gain an understanding of the underlying rationale for the program and the social problem or problems that the program was designed to alleviate. This phase of an evaluation study has been labelled 'Program Conceptualization and Design' by the authors.

A second phase of the evaluation process outlined by Rossi and Freeman is called 'Program Monitoring'. Monitoring of a program is done to ensure that the program is reaching its intended target population and to ensure that the components of the program are operating as intended by the program designers.

The third and final evaluation activity advocated by Rossi and Freeman is 'Program Utility Assessment'. In this phase of an evaluation study the effectiveness of a program in achieving its intended goals, the benefits derived by program participants, and the comparability of the program to a similar program in operation elsewhere are the foci of the evaluation efforts. The evaluation questions raised in this study were framed within the context of these three activities.

In the present context, the perceptions of program participants concerning the value of the program could have been considered under both the program monitoring and utility assessment evaluation categories. It was decided to place these perceptions in the former category for two reasons. First, the other information collected from participants such as their reasons for participating and their demographic characteristics, clearly belonged to the monitoring category, and for coherance of presentation it made sense to keep all of the participant information in one place. Second, the information on perceived benefits and their relationship to success and failure seemed to be more closely tied to the assessment of the program in operation than to the more general utility assessment category. Using this logic, it was decided to think of the utility of the program from the perspective of institutions and companies that are external to the operation of the program but which are intended to be affected by the program.

The role that an evaluator plays represents another important issue in a program evaluation study. In the minds of many writers and practitioners, the role of judge is chief among those that an evaluator plays. Judgement is an important and integral part of the evaluation process. In this evaluation study, however, the notion of 'evaluator-as-judge' was tempered with the idea that an evaluator's major roles are those of educator and illuminator (Cronbach, 1982; Cronbach, Ambron, Dornbusch, Hess, Hornik, Phillips, Walker, & Weiner, 1980).

Based on the positions outlined above, the purposes of this evaluation study were primarily to provide program sponsors with descriptive data concerning the AHSEP and to make recommendations based on the descriptive data. It was hoped that the approach taken would reveal some fresh perceptions concerning the Alberta High School Equivalency Program and that these perceptions would influence future program planning, decision making, and policy development.

E. Evaluation Questions

To evaluate the Alberta High School Equivalency Program questions were formulated that addressed each of the evaluation activities advocated by Rossi and Freeman (1982). These questions related to the history of the Alberta equivalency program, the goals, objectives, and rationale of the program, the test instruments, criteria, and procedures used to assess equivalency, the nature of the population applying to the program, program acceptance, and a comparison of the Alberta program with one in operation elsewhere in Canada. Specific questions for each of these areas are given below. The Rossi and Freeman evaluation category is given first followed by sub-categories that denote the type of question being asked.

1. Program Conceptualization and Design

1.1 Program History

Question 1.

What were the historical events surrounding the formulation of policies relative to the Alberta High School Equivalency Program?

Question 2.

What were the historical events that led to the acceptance of the GED tests as a way of assessing adult high school equivalency in Alberta?

1.2 Program Goals, Objectives, and Rationale

Question 3.

What are the goals and objectives of the Alberta High School Equivalency Program?

Question 4.

What is the rationale for the existence of the Alberta High School Equivalency Program?

2. Program Monitoring

2.1 Assessment of Equivalency

Question 5.

Have the GED tests performed at a technically acceptable level in terms of item characteristics such as difficulty and item-test correlation and in terms of test characteristics such as reliability, speededness, and floor and ceiling effects since the inception of the Alberta High School Equivalency Program? What are the weaknesses of GED candidates as revealed by their responses to GED test items?

Question 6.

To what extent are the 1980 Alberta and Canadian norming studies valid for purposes of setting a passing score for the GED tests?

Question 7.

What procedures are followed for individuals who receive an equivalency diploma through the alternate route to writing the GED tests? Are these procedures applied uniformly?

2.2 Characteristics and Perceptions of Program Applicants

Question 8.

What are the characteristics of the population of equivalency program applicants in terms of their ages, sex, previous highest level of education, reasons for application, expectations for help through the program, perceived program benefits, levels of employment, and educational activities?

Question 9.

Are there any differences between successful GED applicants, non-successful GED applicants, and non-GED program applicants?

3. Program Utility Assessment

3.1 Program Acceptance

Question 10.

To what extent are equivalency program graduates treated as equivalent to regular high school graduates by Alberta employers and post-secondary institutions?

Question 11.

What benefits have equivalency program graduates received according to Alberta employers and post-secondary institutions?

3.2 Program Comparison

Question 12.

How does the Alberta High School Equivalency Program compare with the Manitoba equivalency program in terms of stated goals and objectives, program acceptance, and the characteristics of program applicants?

CHAPTER II: A REVIEW OF RELATED LITERATURE

The literature related to high school equivalency programs is diverse and, in many instances, unpublished. This situation presents special problems for the reviewer as publication and, to some extent, research standards have not been issues for those writing about equivalency programs. A large portion of the information available was found to be in the form of government documents, research briefs, or ERIC documents. Nonetheless, for purposes of this review a substantial body of useful prior research was available.

The review that follows concentrates on three major concerns found in the literature related to high school equivalency programs. These concerns deal with the validity (predictive and concurrent) of the GED test battery, with issues arising out of Canadian and American equivalency program evaluation studies, and with the psychological and demographic characteristics of equivalency program participants.

Each of these issues found in the literature is related to questions raised in this study. The issue of validity relates primarily to the usefulness of the GED tests as a way of assessing high school equivalency and to the usefulness of the tests as predictors of college success. Consequently, the literature related to the validity of the GED tests has implications for both the program monitoring and program utility assessment phases of the study. Similarly, a review of Canadian and American equivalency program studies is applicable to each of the evaluation activities. The literature associated with the psychological and demographic characteristics of equivalency program participants contains useful information about the target population of equivalency programs. Target population description is one of the fundamental activities of the program monitoring phase. In the review that follows, the validity of the GED tests will be considered first.

A. The Validity of the GED Test Battery

1. Predictive Validity

Most high school equivalency programs currently in operation in both the United States and Canada use the GED tests as a way of assessing and certifying adult high school equivalency. In Canada, as mentioned in Chapter I, all provinces except Ontario and Quebec have opted to use the GED tests for these purposes. As a result of the widespread use of the GED tests, the question of the validity of the sub-tests that comprise the GED battery and the GED battery as a whole has been addressed on numerous occasions. A word of caution, however, is in order when interpreting the findings of GED validity studies. The tests have been revised on three occasions and normed in the United States four different times -- in 1943, 1955, 1967, and again in 1977. A recent norming study, primarily aimed at providing Canadian GED test users with norms for six new forms of a Canadian Social Studies sub-test, was conducted in 1980. Furthermore, revisions have been undertaken as the population writing the tests has changed from one of primarily military personnel to one which is more representative of early school-leavers in general and as the purpose of the tests has evolved from one of placement to one of selection.

Reviews in Buros (1949, 1953, 1959) have endorsed the GED instruments as technically sound and as "superior tests of their type" (Froelich, 1953, p.66) but seem to be less certain regarding what the tests actually measure. The earliest forms of the GED tests were criticized for the omission of validity data. As Conrad (1949, p.40) was careful to point out, "no evidence is presented concerning the validity of the tests for the purposes for which they were devised." The purpose of the 1943 GED forms to which Conrad referred was to assist schools in the determination of how much academic credit students should be granted for educational experiences obtained while in military service. Findley (1949) held a similar opinion regarding the GED tests and maintained that the only way to judge the tests was on the basis of their face validity. Both Conrad and Findley were also concerned with whether the GED tests measured some form of academic achievement independent of general intelligence or general reading ability. The use of test scores that potentially contain a large aptitude component for purposes of granting academic credit and, ultimately, a diploma was harshly criticized (Findley, 1949).

At the same time as the above criticisms are noted, it must be said that studies related to the first forms of the GED tests indicated the usefulness of these forms as predictors of college success. Crawford and Burnham (1944), for example, found that the total score on the GED battery was as good a predictor of first-term grade-point average (GPA) as the College Entrance Examination Board measures (CEEB). The correlation between total GED score and first-term GPA for a sample of Yale college freshman was reported to be 0.56. A correlation of 0.53 was given for the relationship between the total CEEB score and first-term GPA. These relationships are reasonably impressive when one considers that the sample used came from a population of already-selected individuals. The correlation due to the resulting restriction of range was, in all likelihood, attenuated.

In a similar investigation, Dyer (1945) studied the relationship of first-year college rank for a population of Harvard freshman and their total scores on the GED tests. For this relationship a correlation of 0.46 was reported. The GED tests were, however, noted to be of little value in determining the advanced standing of students but were considered to have some value for admissions purposes.

Callis and Wrenn (1947), working with a sample of Second World War veterans enrolled in the General College at the University of Minnesota, also conducted a predictive validity study of the GED tests. In this instance the relationship of interest was between the total GED score and the first-term honor point ratio of the sample. The honor point ratio was a system similar to the four-point GPA system many colleges and universities use today. The correlation reported in this case was 0.72. The early forms of the GED battery were thus considered effective predictors of first-term college performance.

That the GED tests are good predictors of first-term college success is also reported in research conducted on more recent forms of the GED. The relationships are, however, less impressive. Sharon (1972a), in a study of GED graduates from 40 colleges and universities (12 two-year and 28 four-year institutions), attempted to determine the predictive validity of the GED tests. Of 1,367 students identified for the study some 538 or 39% of the total sample agreed to participate. GED correlations with GPA for the five sub-tests of the battery ranged from 0.30 to 0.35. These coefficients were reported as similar to correlations of Scholastic Aptitude Test (SAT) scores and GPA used in predicting the first-term college success of regular high school students. The same attenuation problem as noted earlier may have been operating here as well. It is noteworthy that Sharon found the type of institution attended (two-year or four-year) and the sex of the student to be moderator variables in the relationship of GED scores to first-term GPA. GED graduates at two-year institutions had higher correlations between their GED scores and their first-term GPA than did GED graduates at four-year institutions. For example, a correlation of 0.51 between GPA and scores on the Social Studies sub-test is reported for GED graduates at two-year institutions while a correlation of 0.25 is reported on the same relationship for GED graduates at four-year institutions. This difference in the correlation between GPA and GED scores may, however, be an artifact of the use of different selection criteria by two- and four-year institutions. Different selection criteria may have lead to a restriction of range in four-year institutions and, as a consequence, a lower correlation.

Age was also found to be a moderator variable in the relationship of GED scores and GPA (Sharon 1972a, 1972b). At the same time, however, little difference was found in the GED - GPA relationship for subjects under age 30 versus those 30 years of age or older. Sharon (1972b) also reported that the relationship between GED scores and GPA was stronger for females than males.

Another interesting finding reported by Sharon (1972b) was that the sub-tests of the GED forms used in his study were found to be relatively unrelated to one another. The correlations ranged from a low of 0.34 for the English and Mathematics sub-tests to a high of 0.64 for the Literature and Social Studies sub-tests. To Sharon, such relationships suggested that the sub-tests were, to a great degree, measuring unique factors. Similar correlations were found by Crawford and Burnham (1944) who interpreted their results to imply that the GED tests measured primarily a global verbal factor. They hastened to add, however, that the values for the intercorrelations of the sub-tests were not so high that some content factors could not be considered to be operating. Dyer (1945) also found the earliest forms of the GED to contain highly intercorrelated sub-tests. He also concluded that the GED tests tended to measure some sort of general factor.

J. D. Ayers (1980), in a study involving a population of prison inmates enrolled in a special university program offered by the University of Victoria, attempted to determine the common factor variance in GED tests and first-year university course grades, the effectiveness of GED average scores for the selection of students for the university program in question, and the predictive validity of the GED tests. He found no justification for setting an admission standard for GED graduates as high as the one used at the University of Victoria where a mean standard T-score of 58.5 on the GED tests is required for admission. He also concluded, on the basis of a principal components factor analysis, that the GED tests, while good predictors of first-year academic performance, are really measures of general reading ability and reading comprehension and should not be considered high school equivalency examinations. Predictive validity in Ayers' study was viewed from the perspective of a success ratio rather than a correlational analysis. Ayers' study suggested that the present forms of the GED tests are good predictors of college success.

In a predictive validity study of 100 GED graduates at a two-year college in Texas, Wolf (1980) found a correlation of 0.35 between mean GED scores and first-term GPA. A stepwise multiple regression analysis for the same population revealed a multiple correlation of 0.38 with

Test 4 (Reading Skills) as the first predictor to enter the equation. This finding suggests that reading comprehension is the major factor measured by the present GED battery. The addition of student age and number of high school grades completed improved the multiple correlation to 0.47, with age being the second variable added. Wolf (1980) also found no significant differences between the mean GPAs of high school graduates, non-high school graduates, and GED graduates.

In connection with the predictive value of the GED tests, questions have also been addressed concerning the actual performance of GED graduates as compared to regular high school graduates. Recently, a number of writers have focused on this question. Three studies are of note. Sonnenblick (1980) compared New York state graduation requirements for high school seniors (who were required to pass competency tests in reading, writing, and mathematics) with GED requirements (a standard T-score of 35 or better on each of the five GED sub-tests and an average of 45 on the entire battery). She found that the two batteries were highly correlated ($\underline{r}$ = .77) and suggested that similar skills were being measured in both cases. It was also reported that "of the 116 [GED] candidates only eight failed to meet the graduation standard on the [competency tests] while 50 failed to meet the GED requirements for New York state" (Sonnenblick, 1980, p.1). The author suggested that this evidence refutes claims that the GED is an easy route to a high school diploma.

Vocational education students served as the focus for a comparative study of regular high school graduates and GED graduates by Wilson, Davis, and Davis (1981). The two groups consisted of 77 regular high school graduates and 27 GED graduates. The GED students earned higher

GPAs than the regular high school students but the difference was found to be non-significant following an analysis of covariance with age as the covariate.

In a similar Canadian study, Colert (1983) compared the mean GPA s for two groups of first-year students at Brandon University. One group consisted of high school equivalency students (GED) and the other of students who had received regular high school diplomas. Colert found no significant differences between the groups in terms of first-year GPA but did find that regular high school diploma holders successfully completed more credit hours than equivalency diploma holders.

2. Concurrent Validity

The GED tests have also been compared to other similar instruments. The General Education Performance Index (GEPI), a much shorter test battery than the GED and also designed to measure general educational development, has been found to correlate well with the most recent forms of the GED (r = .70 to r = .84) (Modjeski & Michael, 1978; Musgrove, 1981). The Comprehensive Test of Basic Skills (CTBS) has also been shown to be similarly related (r = .40 to r = .68) with performance on the GED battery. In studies done to investigate the relationship between performance on the GEPI and the GED and between performance on the CTBS and the GED, Modjeski and Michael (1978) found both age and the previous highest grade completed by the subjects to be uncorrelated with performance on the GED tests. This finding seems, a least on the surface, to be consistent with the notion that what the GED is measuring is general ability and not school achievement. Presumeably if achievement were being measured a negative correlation with age and a positive correlation with highest grade completed would be observed.

B. Evaluation Studies

1. American Equivalency Programs

Adult education has been one of the largest growth industries in the United States during the past 15 years. Concomitantly, government agencies responsible for funding education programs for adults have demanded evidence, in the form of program evaluation research, to assess the effectiveness of these programs. It is not surprising, then, to find a number of evaluation studies related to adult high school equivalency programs. A review of this body of research has revealed that the vast majority of studies conducted to date are impact evaluations using survey-descriptive approaches. Variables of particular interest have been employer and educational institution acceptance of equivalency program graduates, employment and educational benefits derived from program participation, and a variety of personal and demographic characteristics of program participants such as sex, age, previous highest level of education, reasons for taking the GED tests, occupation, and many others.

Equivalency program acceptance, especially as it is related to successful completion of the GED tests, is well documented. For example, all of the United States armed forces accept high school equivalency diplomas as meeting one of the criteria for entrance to the services (Waller, 1976). In addition, American post-secondary institutions seem willing to accept equivalency program graduates. In a survey of 2,236 American colleges and universities, the American Council on Education (ACE) (1982a) found that about 88% of the institutions admit applicants with GED credentials. Sharon (1971) reported similar findings a decade earlier. On the surface such findings bode well for the impact that equivalency programs have had in the United States. It is important to point out, however, that often this acceptance is conditional upon the applicant's possession of other relevant attributes or upon the applicant having taken specific courses. For example, according to the 1982 ACE study just cited, about 51% of the institutions that admit high school equivalency graduates require these graduates to submit additional information such as SAT scores or College-level Examination Program test scores. In fairness, however, it must be said that the same conditional acceptance is also generally true for regular high school diploma holders. Thus, having a diploma is, in many cases, a necessary but not a sufficient condition for receiving acceptance into the American military or post-secondary institutions.

In a recent study of educational credentials accepted by the American military, Laurence (1983) found general acceptance of equivalency diplomas for entrance into the Navy and Air Force but not into the Army or Marine Corps. The Marine Corps and Army classify equivalency program graduates as non-high school graduates (Laurence, 1983). The Marine Corps and Army rationalize their classification by suggesting that the inclusion of GED graduates in the non-high school group will help to lower the attrition rate of the non-high school group. At present, the first enlistment term attrition rate is 20% for high school graduates and 40% for non-graduates.

Many writers have also studied the question of benefits derived from participation in and succussful completion of an equivalency program. Beusse (1974) determined the benefits of successful equivalency program completion among American armed forces personnel.

These benefits were found to be higher pay grades while in the military, higher paying and more prestigious jobs in civilian life, and higher mean weekly earnings than non-high school graduates. Similar employment benefits are reported by C. V. Ayers (1980) for graduates of a community college high school equivalency program, by Fischer and Evanson (1979) for Adult Basic Education graduates, and by Moore (1982) for successful GED candidates in Kentucky. Anecdotal accounts in the literature have also spoken of enhanced employment status, further educational opportunities, and increased earnings for equivalency program graduates (Harris, Hedman, & Horning, 1983; Witter, 1978).

The most extensive research to date dealing with the employment and educational benefits derived from the acquisition of an equivalency diploma has been conducted by Cervero and Peterson (1982) on behalf of the American Council on Education. These authors surveyed a random sample of 1906 GED applicants for 1980 in an attempt to monitor the training and employment activities of these individuals. A response rate of 24% was reported by these authors. Of the 158 GED applicants who responded to questions dealing with employment status, 52% suggested that the equivalency credential was helpful in obtaining a new job and 20% said that the diploma was useful in obtaining a promotion or raise. Similar results for those responding to questions related to training were also reported. Fifty-one percent of the respondents felt that the equivalency diploma had helped them in being admitted to an educational institution and 24% said the equivalency diploma had helped them to be accepted into an on-the-job training program. It is also interesting to note that in all cases GED applicants' expectations for benefit exceeded the benefits they actually received. Illustrative of this finding is that of those who expected the GED credential to help them to qualify for a new job, 25% reported that the credential was of no assistance in this regard. Such findings led Cervero and Peterson (1982, p.5) to conclude that

> while the majority of people used the GED credential to achieve their ends with regard to employment and educational activities, a substantial percentage do not report being helped.

Using the same population as Cervero and Peterson, Behal (1983) examined the sub-population of GED examinees who wrote the tests primarily because they believed that the equivalency credential would assist them in being admitted to an educational institution. A survey response rate of 35% is reported by Behal (1983). A large percentage (22%) of the surveys could not be delivered, attesting to the high transcience among individuals in the GED population that has been reported by researchers such as Moore (1982). Several findings of the Behal study are of note. First, for individuals who had taken the GED, no age difference was found between those who went on to post-secondary studies and those who did not. Second, the unemployment rate reported by the GED examinees was 24%, almost "twice the national average" at the time the survey was taken (Behal, 1983, p.4). Third, the opinions of the subjects toward the GED testing experience was dependent upon whether the individual had passed or failed the tests. At the same time, however, Behal (1983) reported that both successful and non-successful GED examinees felt positively about the testing experience, with 73% of the latter group indicating that they would take the tests again.

Recent research has also looked at the question of whether employers make a distinction between the regular high school credential and the equivalency (GED) credential with respect to their hiring and promotion practices. Malizio and Whitney (1984) surveyed a random sample of 1,499 member companies of the American Society of Personnel Administrators in an attempt to answer this question. Of the 643 respondents, most were from the manufacturing or service industries (Malizio & Whitney, 1984). Although the authors do not define what they mean by the phrases 'major emphasis' or 'moderate emphasis', they reported that 90% of the employers place these emphases on educational credentials. In addition, the employers reported that 18% of the jobs they offer require less than a high school diploma, 38% require a high school diploma or equivalency credential, 16% require certification beyond high school, and 28% require a college degree. Nearly 40% of the respondents request proof of educational standing from job applicants. Two other important findings reported by the authors were that 98% of the companies provide equal opportunites for advancement to persons holding equivalency credentials or high school diplomas and that 50% of the respondents stated that, for those individuals who did not have a high school diploma, obtaining an equivalency diploma "would enhance opportunities for promotion" (Malizio & Whitney, 1984, p.3). These results speak strongly of the benefits to be derived from obtaining an equivalency diploma.

At the same time, however, at least one cost-benefit study has provided evidence which suggests that equivalency diplomas may not provide their holders with significant benefits. Dhanidina and Griffith (1975) carried out a cost-benefit analysis for graduates of a GED preparatory program and found that while the GED is seen as an investment by program participants there is no evidence to suggest that the investment will pay off in the future. Success in the job market is a function of past success and not a function of the high school equivalency credential. Costs in terms of tuition, supplies, and time spent in acquiring the credential were not seen as translating into benefits such as increased educational opportunities, improved employment status, or wages. In short, the GED was not found to be an economically sound investment.

Other benefits of a more personal nature have been reported by both successful and non-successful equivalency program participants. Most frequently mentioned in the literature is the notion that participation in a high school equivalency program enhances one's self-image or self-confidence (Cervero & Peterson, 1982; Fischer & Evanson, 1979; Harris et al., 1983; Waller, 1976). This may, in part, account for many of the employment benefits reported earlier. With increased self-confidence, many equivalency program graduates are now willing to apply for jobs and promotions that they previously thought were beyond their reach.

Numerous evaluation studies of equivalency programs in the United States have investigated the personal and demographic attributes of program participants. These studies have revealed that most GED candidates are female (Malizio & Whitney, 1981), experience a higher level of unemployment than the national average (Behal, 1983), and have between nine and 10 years of formal schooling (Malizio & Whitney, 1981; Moore, 1982; Swarm, 1981). Most GED participants are blue-collar workers having jobs in service industries or as laborers. As well, a significant percentage are homemakers. The three most often mentioned reasons for participating in an equivalency program are 1) job-related reasons such as the desire to improve employment status, 2) education-related reasons such as the desire to gain admission to a post-secondary institution or training program, and 3) personal satisfaction (Malizio & Whitney, 1981; Swarm, 1981).

2. Canadian Equivalency Programs

The Province of Saskatchewan has been a leader in Canada in the assessment of high school equivalency for adults. In 1970, Saskatchewan adopted the GED tests as a way of determining adult high school equivalency. Wedel (1974), in a survey of Saskatchewan equivalency program participants for the first two years of the program's operation, found that federal government agencies and large national firms were reluctant to consider the GED certificate as equivalent to a regular high school diploma. This finding was obtained in spite of the fact that employers' job performance ratings of GED graduates and non-GED high school graduates were similar.

In recent years, Saskatchewan's Continuing Education Department has been active in monitoring levels of equivalency program acceptance among employers and educational institutions in the province. The initial study of this kind in 1977 suggested, after seven years of implementation, that approximately one-half of the employers and educational institutions in the province regarded the GED certificate as equivalent to a regular high school diploma (Province of Saskatchewan, 1977). The remaining 50% qualified their acceptance by requiring individuals to possess additional experience or specific courses.

In 1981 another employer and institutional survey was undertaken in

Saskatchewan. A greater measure of acceptance and awareness of the equivalency program was reported for this survey (Province of Saskatchewan, 1981) but this finding must be interpreted in light of the similarity of the 1977 and 1981 samples. The 1981 sample was slightly larger but included all of the previous sample. It is reasonable to conclude that the 1981 sample was sensitized as a result of its participation in the 1977 study. At the very least, conclusions regarding general levels of acceptance of the Saskatchewan equivalency program for this more recent sample are dubious.

A follow-up survey of GED participants was also conducted in Saskatchewan in 1981. The primary purpose of this survey was to determine the use that GED participants make of the GED credential and the expectations that applicants had prior to writing the GED tests. Findings for a stratified random sample of 548 program participants indicated that, prior to writing the GED tests, most (64%) wrote the tests to improve their employment opportunities (Province of Saskatchewan, 1982). After writing the tests, however, most said that they wrote for reasons of personal satisfaction (46%) while only one-third admitted to writing the tests to improve their employment opportunities. The percentage writing to increase their educational opportunities was nearly the same in both instances with 18% indicating this reason prior to writing the tests and 19% after having written the tests (Province of Saskatchewan, 1982).

Discrepancies between expectations and benefits similar to those mentioned earlier by Cervero and Peterson (1982) are also reported in the Saskatchewan follow-up survey. After writing the GED tests 20% of those who expected the GED to assist them in this regard reported that the GED certificate did not help them at all (Province of Saskatchewan, 1982). Similar results were given concerning assistance in gaining a job promotion.

It is also important to point out that discrepancies were found between program participants' expectations for increased educational opportunities and the actual benefits that these individuals received. A typical example of this is that 25% of the group who wrote the GED tests in hopes of increasing their educational opportunities had anticipated that their chances for entry to a community college would be enhanced. Only eight percent, however, felt that the GED credential helped them in this regard (Province of Saskatchewan, 1982). Again, as in most surveys of equivalency program participants, the primary benefit reported was some form of increased self-confidence.

The Province of Manitoba has also been involved in the evaluation of its equivalency program. The Manitoba and Alberta equivalency programs are very similar in size and in the way that the GED tests are administered. Surveys recently conducted in Manitoba addressed many of the same issues that the present study considered. For these reasons the Manitoba program was considered appropriate for the program comparison phase of this study. Details of the Manitoba surveys are, therefore, presented in Chapter IV along with the results of other analyses. A few of the highlights of the Manitoba evaluations, however, should be noted here.

The results of a survey of all GED certificate holders from 1973 to 1980 by the Manitoba Department of Education (1981b) were similar to those of the American studies cited earlier. Most respondents were 21 to 25 years of age, saw the GED as a way of increasing job and promotion opportunities, reported improved self-image as the greatest benefit, and indicated that a large difference existed between their expectations and the actual benefits they had received. One of the few ways in which the Manitoba results differed from those of similar American studies and the Saskatchewan studies concerned the composition of the population. Unlike the American and Saskatchewan equivalency program populations where most participants were found to be female, the Manitoba population consisted of three times as many males as females in 1973. By 1980 almost equal percentages of men and women were taking the tests but men still outnumbered women by a small amount.

A 1982 Manitoba Department of Education study designed to investigate the characteristics and expectations of equivalency program participants and the benefits that these individuals had received, supported the results obtained in both the American and Saskatchewan studies. Education department officials found that while 58% of the respondents to the Manitoba survey expected to gain admission to post-secondary education as a result of acquiring an equivalency credential, 39% actually were admitted to a post-secondary program. Without knowing the bases for the admissions decisions it is difficult to conclude that Manitoba's post-secondary institutions accept the GED credential, however. The Manitoba study also listed personal satisfaction as a reason for the participation of many adults in the program and gave increased self-confidence as the most frequently mentioned program benefit.

A survey of Manitoba employers produced results similar to those reported by Saskatchewan's education officials. Approximately 65% of Manitoba's employers reportedly accept the GED credential, the remainder either being unaware of the program (13%), requiring job applicants to possess specific skills (16%), or not accepting the GED (18%) (Manitoba Department of Education, 1981a).

C. Characteristics and Perceptions of Equivalency Program Participants

A number of ex-post-facto studies related to the characteristics of equivalency program participants were found in the literature. Research that is particularly germaine is that concerning comparisons of successful and non-successful program participants.

The Adjective Check List (ACL) was used by Wilson (1979; 1980) to investigate differences between persistors and non-persistors in a community college GED population. While all GED participants were found to have generally low levels of self-confidence and self-esteem according to the ACL measure, persistors and non-persistors were found to have significantly different ACL profiles. Rolfe and Wilson (1979), reporting on the same population, suggested that the ACL is useful in predicting whether a given individual will drop out or persist in an equivalency program. These authors have gone on record as saying that self-concept is the single most important factor in the determination of risk of attrition in adult education programs.

The concept of self-esteem has also been studied within the context of a GED preparatory program. Looking at successful and non-successful GED candidates in a program for prison inmates, Massaro (1978) found that non-achievers (ie. those who did not pass the GED tests) tended to improve their attitude toward the concepts of 'self' and 'education' even after learning of their failure. Achievers, however, remained relatively constant in their attitudes, improving only slightly.

Not only do successful GED candidates appear to differ from non-successful candidates on self-report measures of self-esteem, they also seem to be different in terms of the field-dependence, -independence construct. Donnaruma, Cox, and Beder (1980) used the Group Embedded Figures Test and found a high positive correlation between success on the GED tests and field independence. This finding is, in part, supported by Harvey (1978) who, in looking at adult learners in general, reported that type of learner (goal-oriented, activity-oriented, or learning-oriented) plays an important role in learner motivation and, as a consequence, in learner success in adult education programs. Field independence also represents a style of learning and may, therefore, contribute to learner motivation.

Personological characteristics such as age, sex, and highest level of education attained contribute to differential motivation among adult learners (Harvey, 1978; Russ-Eft & Steel, 1980). Consequently, levels of satisfaction with adult education programs can be expected to vary with different age, sex, and educational groups.

According to Cross (1981), age is a particularly interesting variable. She maintained that younger people pursue credentials to obtain a job, individuals in the middle age group (25 to 40) think that a diploma will enable them to get ahead in their current job, and those over 50 find the pursuit of educational credentials personally rewarding. Reasons put forward by adults for wanting to participate in adult education programs "correspond consistently and logically to the life situations of the respondents" (p.91).

D. Summary

The literature reviewed has considered three major areas of research related to adult high school equivalency programs. The validity of the GED tests, equivalency program evaluation studies, and the psychological and personological attributes of equivalency program participants were deemed appropriate areas of the literature to consider given the evaluation questions raised in Chapter I and given the evaluation framework that was adopted for the study.

In terms of the validity of the GED tests, a wide range of studies over the past 40 years has attested to the value of the GED tests for purposes of predicting success in post-secondary education. Later forms of the GED battery have been shown to have less predictive power than earlier forms. Research on the most recent forms of the GED tests has suggested that the post-secondary performance of GED graduates and regular high school graduates is similar. Some measure of the concurrent validity of the GED battery has also been found. The issues of content and construct validity have not been addressed but there are indications in the literature that there is a large verbal component which is common to the sub-tests of the GED battery. Research of this type on the most recent forms of the GED tests is, however, lacking.

Numerous large-scale evaluation studies of equivalency programs have been undertaken in the United States and to a much lesser extent in Canada. In general, equivalency program acceptance on the part of employers and post-secondary institutions has been greater in the United States than in Canada. For example, 88% of American post-secondary institutions reportedly accept the GED credential while between 50% and 60% of Canadian post-secondary institutions surveyed accept the credential. A similar discrepancy was found in the literature concerning levels of GED acceptance among employers from the two countries. Often equivalency program acceptance is conditional. Applicants to jobs and post-secondary institutions must frequently support their applications with additional qualifications. This situation is, however, not unlike that faced by most regular high school graduates. The impression is conveyed by the equivalency program evaluation studies that the employers and post-secondary institutions which accept the high school equivalency diploma do so as an aid in the selection process. As a result, the question of equating the equivalency experience with a regular high school experience is often not an issue.

The literature also speaks of the notion that program participants' expectations of benefit are greater than the benefits that they actually receive. At the same time, however, large numbers of individuals feel that the equivalency programs that they have participated in have helped them in a tangible way through improving their educational or job opportunities. Most often the major benefit to be derived from participation in an equivalency program has been reported as increased self-confidence.

The review of the literature also points to a definite lack of Canadian evaluation studies related to high school equivalency programs. While all but two of Canada's provinces have equivalency programs that use the GED tests, only Manitoba and Saskatchewan have seriously involved themselves in any type of evaluation of these programs to date. On the basis of survey results from these two provinces, it appears that Canadian and American GED populations are quite similar, that employer perceptions of the value of the equivalency credential are also similar, but that Canadian post-secondary institutions are more reluctant than their American counterparts to accept high school equivalency credentials as meeting one of their admission criteria.

The literature reviewed above also considered the ways in which successful and non-successful equivalency program participants differ along a number of psychological and personological dimensions. Differences between these two groups have been reported in terms of self-esteem, attitude, field-dependence and independence, motivation, learning style, age, sex, and highest level of education attained. A number of these factors have important implications for the program monitoring and program utility assessment activities of this study.

CHAPTER III: METHODS AND PROCEDURES

The evaluation questions outlined in Chapter I addressed a variety of issues related to the Alberta High School Equivalency Program. To answer these questions adequately several investigative strategies and analytic procedures were required. In this chapter, a discussion of the specific methods and procedures used is presented. Procedures for the data collection activities are given first followed by a general description of the analytic procedures used. Details of the analyses performed will be given in Chapter IV in order to avoid repetition. To assist the reader, the methods and procedures are discussed according to the Rossi and Freeman (1982) evaluation framework used in the study.

A. Program Conceptualization and Design

1. Program History

The history of policy decisions relative to adult high school equivalency in Alberta was investigated through interviews with Alberta Education and Advanced Education officials and through a review of published and unpublished government documents. Four semi-structured interviews were conducted during this part of the study. Interviewees were an Associate Director of Alberta Education's Student Evaluation Branch (SEB), the Co-ordinator of Examination Administration for the SEB, an Assistant Deputy Minister of Advanced Education, and the Director of Instructional Services (Field Services Division) for Advanced Education. Each of these individuals was closely associated with either the development or current operation of the program.

The interviews were conducted between March and May 1984. The roles that each department played in the policy formulation process of the equivalency program and the responsibilities taken on by each department in the implementation of the program were areas pursued in the interviews. Appendix B provides a list of topics discussed during the interviews. In addition, Advanced Education officials provided copies of memoranda, papers, and minutes of meetings in which the concept of an equivalency program, the possiblity of GED testing, and policies and procedures related to adult high school equivalency were discussed. Alberta Education officials declined to provide similar material at the time that the original proposal for the study was presented. Officials of Alberta Education implied, but did not state, that department policy does not allow for the release of internal documents such as memoranda.

The information gathered from the interviews, memoranda, papers, and minutes of meetings was reviewed, summarized, and an historical narrative of the policy development for the equivalency program was written. Additional historical information concerning the equivalency program was found in Alberta Education publications dealing with high school credentials and in the annual reports and handbooks of Alberta Education. It was possible, using all of these sources of data, to piece together the historical development of the current equivalency program within the context of the policy discussions and decisions that resulted in its formulation.

2. Program Goals, Objectives, and Rationale

Two data collection approaches were used to answer the evaluation questions related to the rationale, goals, and objectives of the Alberta High School Equivalency Program. First, semi-structured interviews with the same Alberta Education and Alberta Advanced Education officials listed in the previous section on the history of the program were conducted. These interviews were semi-structured in that, while answers to specific questions were sought, interviewees were given the freedom to comment on any aspects of the equivalency program. The interviews were conducted concurrently with those dealing with program history mentioned in the previous section. Again, a summary of the topics discussed during the interviews is provided in Appendix B.

To gain the perspective of other individuals who are closely associated with the operation and philosophy of the AHSEP, letters were sent to counsellors at the four Alberta Vocational Centres (Grouard, Lac La Biche, Edmonton, Calgary) and to one of the counsellors at the Community Vocational Centre in Slave Lake. The vocational centres' staff were asked to list the goals, objectives, and rationale for the Alberta equivalency program from their perspectives. One follow-up telephone interview was conducted with a counsellor from the Community Vocational Centre in Slave Lake.

Responses to the in-person interviews, the telephone interview, and correspondence written were reviewed in an effort to determine both the range and frequency of goals, objectives and rationale offered by Alberta Education, Advanced Education, and vocational centres staff. To supplement the data gathered through the inquiries described above, official publications of Alberta Education and the American Council on Education were reviewed and statements of goals, objectives, and rationale noted. The materials reviewed were the descriptive brochure of the AHSEP published by Alberta Education (1984), the Alberta Education GED Examiners' Manual, the ACE Examiners' Manual, and the ACE GED Item Writers' Manual.

B. Program Monitoring

1. Assessment of Equivalency

Three questions were asked in an effort to monitor the manner by which Alberta Education assesses the high school equivalency status of adult applicants to the AHSEP. These questions dealt with the technical adequacy of the GED tests, the utility of the 1980 Alberta and Canadian norming studies in establishing passing scores on the GED tests, and with a determination of the procedures used to assess high school equivalency for adults who apply to the alternate route of the AHSEP.

To determine the technical adequacy of the GED tests that have been used in Alberta since the inception of the AHSEP, stratified random samples of 200 answer sheets for forms CA, CE, and CH of the Writing Skills, Reading Skills, and Mathematics sub-tests were selected from the total population of available answer sheets. The answer sheet samples were stratified according to writing centre. The samples used for this part of the study were, therefore, representative of the provincial geographical distribution of GED candidates. Stratification according to writing centre was considered important as one of the major goals of the study was to determine the demographics of the population. GED forms CA, CE, and CH were chosen as these forms had been administered at most of the writing centres during single administrations in 1981 and 1982. Form CA was administered in February 1982 and at a small number of writing centres in May 1982; form CE was administered in February 1983; and form CH was administered in May 1983. Other forms of the GED tests have been used in Alberta but the administration of these forms has occurred across several sittings of the tests. This fact would have made sample selection of other forms more difficult. Information concerning the number of GED candidates who wrote at each of the writing centres for the selected test administrations was made available by Alberta Education. On the basis of this information, the proportions of the sample that should come from each of the writing centres was determined. The answer sheets were numbered and a table of random numbers was used in their selection.

The Natural Science and Social Studies sub-tests were not included for two reasons. First, mathematics, reading, and writing were considered, by program sponsors, to be the fundamental areas of concern to evaluators of adult high school equivalency. These three subjects constitute the core or 'basic' school subjects. Second, as the purpose of the study was to evaluate a number of facets of the equivalency program, in-depth consideration of a single aspect of the program was deemed less important than the investigation of a variety of program areas.

The item responses from the nine samples referred to above were subjected to an item analysis. Test means, standard deviations, reliabilities (KR-20), item difficulties, and item-test biserial correlations were determined for each of the nine samples. The item statistics for each sample were reviewed and items with difficulties less than 0.30 or greater than 0.85 were identified. The lower end of the range was selected because 0.30 is sufficiently greater than chance to make consideration of an item worthwhile. At the same time, the use of 0.85 as the upper criterion was based on the notion that a proportion of at least 0.15 of the responses should be distributed over the other four alternatives of an item. This latter criterion, thus, was based on judgement but seemed appropriate within the context of classical test theory.

The biserial correlations of the items in each of the sub-tests studied were reviewed in an effort to assess the performance of individual items within the context of a given sub-test. Ranges of biserial correlations were also determined. These ranges provided a basis of comparison between this study and the 1980 Canadian norming study as will be discussed latter. The item analyses were also reviewed in an effort to detect evidence of speededness and of floor and ceiling effects.

It was also considered important in the consideration of the technical adequacy of the GED tests to identify the types of items with which GED candidates in the samples had particular problems. The item analyses of the nine samples were reviewed and items that were answered correctly by less than one-half of each sample were identified. Each item was inspected for item faults and then classified according to the tables of specifications for the sub-test in question. The tables of specifications for each of the sub-tests were supplied by the American Council on Education. These tables are unidimensional, content-oriented descriptions of the GED sub-tests. The errors identified were considered to represent errors commonly-made by GED candidates. These errors were considered common in the sense that more GED candidates had trouble correctly answering questions dealing with the content areas identified than did not have trouble.

The utility of the 1980 Alberta and Canadian norming studies designed to set passing scores for the GED tests was determined through a review of ETS documents and technical reports and through Alberta Education reports dealing with the norming studies. It was not possible to gain access to the original norming data for either Alberta or Canada as a whole. Inquiries directed to the Educational Testing Service, sponsors of the 1980 Canadian norming study, by a Senior Research Associate with the American Council on Education, were unsuccessful in locating the norming data. It was discovered that Alberta Education had destroyed the data which had been collected for the 1980 study. The original norming data would have been useful in comparing the performance of samples of actual GED candidates and high school seniors on identical test items. Similarities and differences in test performance between the two groups could then have been investigated and reported in greater detail.

As a result of this lack of primary information, it was necessary to resort to a comparison of summary statistics for the norming study forms and the same forms when written by actual Alberta GED candidates. Test statistics for the norming form, CA, were compared with test statistics derived from the samples of Alberta GED candidates who also wrote form CA. The comparisons were made on the Writing Skills, Reading Skills, and Mathematics sub-tests for the norming study group and the samples of GED candidates. Summary item statistics for the norming population and the samples of GED candidates were also compared and similarities and differences between the groups noted.

A summary report of a GED feasibility study conducted by Alberta Education in 1980 in conjunction with the 1980 Canadian norming study was also reviewed. Details concerning the establishment of a passing score for the GED tests were noted. This review led to a further study of ACE documents, the purpose of which was to determine the basis for the recommendation, by Alberta Education, to use a passing score of 45 on each of the GED sub-tests if the GED Test Program was to be implemented in Alberta.

The third question addressed in this part of the study dealt with the procedures used and criteria applied by Alberta Education officials to award equivalency diplomas by the alternative to the GED Test Program. These procedures and criteria were determined through two semi-structured interviews with the Student Evaluation Branch administrator responsible for making recommendations for the awarding of equivalency diplomas by the alternate route (see Appendix B for a summary of interview questions). In addition, this administrator was contacted at later dates to provide clarification concerning the information gathered through the interviews. A review of 822 applications received by Alberta Education from June 1982 to January 1984 was conducted to determine the extent to which program criteria had been applied uniformly, to gather background information on applicants to this route of the program, and to select a random sample of 200 applicants for the questionnaire part of the study. Cases of rejections and acceptances and reasons behind these decisions were recorded for the 822 applicants. These data were compared with the program criteria and any errors or inconsistencies in the application of criteria were noted.

2. Characteristics and Perceptions of Program Applicants

Questions were asked concerning the characteristics of the population of equivalency program applicants and concerning the differences that may be found between successful GED applicants, non-successful GED applicants, and non-GED program applicants in terms of demographic variables such as age, sex, and highest grade completed, and variables dealing with expectations and benefits. To answer these questions a survey study was undertaken. The questionnaire developed for this part of the evaluation study was constructed after consultation with officials from Alberta Education and Alberta Advanced Education. The opinion of these groups of people was sought concerning the types of questions to be asked and the wording that they thought would be most appropriate for the equivalency program population. A preliminary draft of the questionnaire was then prepared and a field trial of the instrument conducted between March 25, 1984 and April 8, 1984 on a sample of eight equivalency program applicants from the Edmonton area. The purpose of the trial was to detect problems that subjects could potentially encounter in answering the questions posed in the survey and to determine whether the directions given to the subjects were clear and concise. The field trial sample was also asked to critique the covering letter that was to accompany the survey and to provide suggestions for other questions to be asked or alternatives to be provided in the questionnaire. Following the input of those in the field sample, final drafts of the covering letter and two forms of the survey were prepared. One form of the questionnaire, Form A, was prepared for use with the two GED groups in the study (see Appendix C) while the second form, Form B, was prepared for use with the non-GED group (see Appendix D). The only difference between the two forms was the deletion of any references to the GED tests in the case of Form B. An identical, personalized covering letter (see Appendix E) was prepared for use with all three groups. Each questionnaire was numbered to assist in the mailing of a follow-up to non-respondents. An explanation of the numbering was provided in the covering letter.

Random samples of 200 successful GED candidates, and 200 non-successful GED candidates were selected from lists supplied by Alberta Education. The population size of the successful-GED group was 4,333 while that of the non-successful GED group was 802. Each candidate was assigned a number and a random numbers table was used to select the samples from each population. The two populations of GED candidates had participated in one, or in some cases two, of the test administrations between December 1981 and December 1983.

Two hundred individuals, from a population of 822, who had applied to the equivalency program's alternate route (non-GED) between November 1982 and December 1983 were selected at random from the files kept by Alberta Education's Student Evaluation Branch for this part of the program. Selection occurred in the same manner as just outlined for the two GED groups.

Unlike the selection of the answer sheets, where a geographic stratification procedure was used, in the selection of the three groups of equivalency program candidates stratification on this basis was not possible as there was no writing centre associated with the non-GED group. The selection procedure used to identify samples of individuals from the three groups was, therefore, designed to ensure the comparability of the three groups.

Form A of the questionnaire was mailed along with a personalized covering letter and a stamped, addressed, return envelope, to individuals in the two GED groups on April 19, 1984 with an expected return date of May 31, 1984. Form B of the questionnaire was mailed in a similar fashion and at the same time to the non-GED sample. On May 25, 1984 a reminder letter was mailed to non-respondents from the three groups. June 15, 1984 was used as the deadline date for the inclusion of questionnaire responses in the data analysis of this part of the study.

Data analysis of the surveys was undertaken in three stages. First, response frequencies for each of the items on the two forms of the questionnaire were determined. In the second stage, items to which large numbers of individuals across the three groups responded were subjected to two-, and in some cases, three-way crosstabulation analyses. The purpose of these analyses was to investigate potential relationships between and among the group membership, sex, age, highest-grade-completed, pre-program expectations, post-program benefits, employment status, and educational activities variables. Demographic variables (sex, age, highest-grade-completed) were also broken down at this stage of the analysis in order to investigate potential differences among the groups on these variables. Also during this stage, one-way analyses of variance were conducted to assess differences among the three groups on the age and highest-grade-completed variables.

The final stage of the analysis of the questionnaire data centred on an investigation of performance on the five GED sub-tests. All five GED sub-test scores were used rather than only those for the Writing Skills, Reading Skills, and Mathematics sub-tests to enable comparisons to studies found in the literature, notably the work of Modjeski and Michael (1978). The breakdown of the demographic variables of age and highest-grade-completed outlined above suggested differences between the two GED groups. Sex was not found to be an important variable in this regard. Two-way multivariate analyses of variance (MANOVA) were considered but the number of non-successful GED candidates in some of the age and grade-level categories of interest was too small to warrant such an analysis. Furthermore, an analysis of the main effect due to GED group was thought to be circular since those groups had been formed on the basis of their performance on the dependent variable. As a result, the two GED groups were treated as one group for the purposes of the analysis of the sub-test score vectors.

To determine whether the sub-test score vectors differed significantly depending upon age four age groups were created: age 25 or less, 26 to 30, 31 to 40, and over 40 years of age. For the analysis of grade, four groups were created: grade nine or less, grade 10, grade 11, and grade 12.

C. Program Utility Assessment

1. Program Acceptance

Questions were asked in an attempt to assess the levels of acceptance of the Alberta High School Equivalency Program by Alberta's post-secondary institutions and by groups of Alberta employers. These questions considered the manner and extent to which the equivalency program had been accepted and the benefits that equivalency program applicants may have received as a result of their participation.

To answer questions related to the acceptance of the equivalency program by Alberta's post-secondary institutions, registrars from 19 universities, colleges, and technical institutes were surveyed. This survey took two forms. Some registrars preferred to respond in writing to the questions posed while others preferred to be interviewed over the telephone. The interview/survey questions are found in Appendix F. Registrars were asked to outline adult admissions policies used by their institutions. Institutional policy statements for adults with equivalency diplomas and for adults without any sort of high school credential were requested of each registrar. The number of post-secondary applicants possessing equivalency diplomas was also requested for each institution along with an indication of whether having an equivalency diploma made a difference to the admission decision. Registrars were also asked to comment on the value they place on high school credentials.

The responses of the registrars to the admissions policy questions were categorized according to the type of institution they represented -- university, college, technical institute. Frequencies of each policy type were recorded and similarities and differences among the institutional groups were noted. The comments made by registrars were reviewed and common themes extracted. These themes were then categorized and the frequencies of each theme determined.

To determine the extent to which Alberta employers accept the equivalency diploma for purposes of hiring and promoting individuals, two groups of employers were chosen. A general group of employers was selected with the assistance of the Alberta Bureau of Statistics. On the advice of demographers employed by the Bureau, it was decided that the names, addresses, and telephone numbers of three employers from each of seven categories of employers should be provided by the Bureau. Only employers who engage large numbers of individuals were considered for inclusion in the sample. It was thought that such employers may have come in contact with equivalency program graduates and would, therefore, be more likely to have opinions regarding the program than employers who hire small numbers of people. The seven strata selected for the study resulted in the representation of employers from the manufacturing, construction, transportation, retail trade, finance, and personal services industries, and from public administration organizations.

Personnel officers representing the various organizations were telephoned to determine their interest in participating in the study. Interviews were arranged with personnel officers of organizations that demonstrated an interest in being involved in the study. The intent of the interviews was to determine the hiring policies of various organizations especially as these policies relate to educational credentials.

A letter outlining the purposes of the study was mailed to each of the nine personnel officers who agreed to participate in the study (see Appendix G). These personnel officers represented a large Canadian meat-packing firm, a national garment manufacturer, a local construction company, a western-Canadian department store chain, a national bank, a local hospital, a national transportation firm, and the municipal and federal governments. The 12 employers who declined to participate generally did so because they felt that they did not have time for the interview or because they were not interested in the issue of high school equivalency. An interview schedule was developed for use at the employer interviews (see Appendix H). Due to the diversity of the sample, however, some of the questions asked had to be modified to fit the situation of the employer being interviewed. For example, the question dealing with the educational requirements of different jobs was inappropriate for some employers as the diversity of the jobs they had to offer made it impossible to estimate the percentages in each job category. These employers were not asked to supply the percentage data.

A second group of employers known to accept the equivalency diploma for purposes of hiring and/or promoting individuals was identified with the assistance of Alberta Education and Alberta Advanced Education officials and the staff of vocational centres. Only three such employers were identified. The three employers in this group were also telephoned and later contacted by mail to confirm their participation in the study. The same interview schedule that was used with the general group of employers was also used with this second group of employers. All employer interviews were completed between March and May, 1984. Each interview was from 30 to 45 minutes in length.

The hiring policies and philosophies outlined by employers were categorized and frequencies of each type of policy were determined. Frequencies of response to other interview questions were also tabulated. Employer comments concerning the value they place on high school credentials were reviewed and general themes extracted from the comments. These themes were then summarized.

2. Program Comparison

The extent to which the Alberta High School Equivalency Program is similar to other equivalency programs offered in Canada was addressed through a comparison of the goals and objectives of the AHSEP and the goals and objectives of the Manitoba equivalency program. The Manitoba equivalency program was selected because of its similarity to the Alberta program in terms of size and administration (eg. both programs have been centrally administered). Also, as stated in Chapter II, the recent equivalency program studies from Manitoba were found to be quite similar in focus to the present study. It was thought, therefore, that the Manitoba survey results would be the most comparable of those available from Canadian provinces.

To determine the goals and objectives of the Manitoba program, a telephone interview with the former GED administrator for Manitoba was conducted on July 26, 1984. During the interview, questions were asked about the structure of the Manitoba program, the details of the follow-up surveys that have been conducted in Manitoba, the size and scope of the Manitoba program, the extent to which the Manitoba program is reaching its intended audience, and whether the Manitoba program has been successful.

The goals and objectives of the Manitoba and Alberta equivalency programs were compared following the interview and similarities and differences between the two programs noted. The other information gathered through the interview was used as descriptive background data for a discussion of the two equivalency programs.

The published results from a series of surveys conducted by the Manitoba Department of Education between 1972 and 1982 were compared to the results of the present study. A similar comparison was made using the results of an employer survey conducted in Manitoba in 1981 and the results of the employer interviews. Similarities and differences in the results of the equivalency population surveys and of the employer surveys from the two provinces were then documented.

CHAPTER IV: RESULTS AND DISCUSSION

In this chapter results of inquiries into a number of facets of the Alberta High School Equivalency Program are reported and discussed. The chapter consists of three parts. Each part corresponds to one of the three evaluation activities of Rossi and Freeman (1982). First, the results of the program conceptualization and design phase of the study are discussed. This discussion focuses on the results of research into the historical background and the goals, objectives, and rationale of the Alberta High School Equivalency Program. Second, the results of program monitoring activities are presented. These activities were concerned with issues related to the characteristics of AHSEP participants and the methods by which equivalency is assessed, namely the GED tests and the alternative route for obtaining an equivalency diploma. Third, the results of program utility assessment inquiries are presented and discussed. Of particular importance here is the acceptance of the equivalency program by employers and post-secondary institutions.

Comparisons of the Alberta and Manitoba equivalency programs will be presented throughout this chapter as findings related to each of the three major areas of this evaluation study are reported and discussed.

A. Program Conceptualization and Design

1. Program History

Inquiries into the historical background of the Alberta High School Equivalency Program considered the events surrounding the formulation of program policies and the events related to the acceptance of the GED tests as a way of assessing adult high school equivalency in Alberta.

These queries revealed several important insights into the policy decision-making process which will be discussed in conjunction with the historical information that served as the focus for this part of the investigation.

Historical information was gleaned from a variety of sources. Alberta Advanced Education provided a number of documents (memoranda, minutes of meetings, papers) on which the following narrative historical account is based. Additional information was gathered through a review of government publications and interviews with Alberta Advanced Education and Alberta Education officials.

Informal discussions with Alberta Education officials revealed that adult high school equivalency has received the attention, albeit limited, of Alberta's provincial education department since the 1960's. During that decade, the Alberta government established regulations that made adult high school certification possible. This initial set of regulations was closely linked to the requirements for the graduation of regular high school students. For whatever reason, Alberta Education officials contacted were unable to locate the specific regulations that most seemed to recall having existed. A review of the department's annual reports and handbooks from the late 1950's up to 1970 produced no evidence concerning the existence of these regulations. An historical review of evaluation roles published by Alberta Education (1976) and a report dealing with high school graduation requirements in Alberta by Warren (1975) have both described a new set of adult high school certification regulations that were introduced at some time between 1970 and 1975. The certificate granted under these regulations was called the Adult High School Equivalency Diploma. The regulations provided for "the conversion of non-academic and non-school experiences into credits" (Warren, 1975, p.54) for the first time.

It became apparent early in the study that the initiative for the development of the AHSEP came from the post-secondary education community, particularly those associated with vocational training programs. Their cause was championed by the department of Advanced Education and Manpower (now Alberta Advanced Education) which became involved in the debate surrounding the issuance of adult high school credentials in late 1974 (Assistant Deputy Minister - Advanced Education, interview, May 1, 1984). At that time a working paper was written by department officials in which policies and guidelines for issuing an Advanced Education equivalency diploma were outlined. The draft was circulated among department officials and heads of provincially-administered institutions. Concerns were expressed about the public acceptance of an Advanced Education diploma and the potential confusion which may have resulted if both Alberta Education and Advanced Education and Manpower were to issue adult high school equivalency credentials.

As a result of reactions to the working paper, a meeting was held in late 1975 between officials of the departments of Education and Advanced Education and Manpower to discuss the future of the Adult High School Equivalency Diploma. Part of the discussion centred on the recommendations made by Warren in his 1975 study of Alberta's high school graduation requirements. The Warren recommendations pertinent to the discussions at this meeting were that:

1. The name "Adult High School Equivalency Diploma"

be retained;

2. The certificate be issued by the Department of Education;
3. The evaluation of non-school credits be the function of the local education authorities under clear guidelines from the Department of Education;
4. The number of credits gained through classroom instruction be reduced from a minimum of 60 to a minimum of 50;
5. Credits for age be discontinued;
6. Credits for adult education courses be raised from a maximum of 15 to a maximum of 25;
7. Certificates of accomplishment, obtained through non-school agencies be recognized as trade-offs for high school credits if the area of accomplishment is highly related to a school subject;
8. The 100 credit requirement be left intact for the equivalency diploma; and
9. A new and alternative route be established for the attainment of the Adult High School Equivalency Diploma requiring of applicants minimum performance on power tests relating to mathematics, science, English, and general knowledge. (Warren, 1975)

The decision was made at the meeting to maintain the status quo - Alberta Education would continue to issue the equivalency diploma without the changes recommended by Warren. It became clear from a reading of the available documents that Alberta Education was prepared to take a reactive rather than proactive stance with respect to adult high school equivalency in Alberta.

Over a year and a half later, in July 1977, Advanced Education and Manpower received a report from an ad hoc committee of the Alberta Colleges Counsellors' Association entitled "Recommendations for Adult High School Equivalency in the Province of Alberta." The details of the report are outlined in yet another working paper prepared by the College Programs Branch of Advanced Education and Manpower (May, 1979). It is apparent that college counsellors had certain expectations in terms of the rationale for an adult high school equivalency program. Citing standardized grade level certification, availability of opportunities for short-term goal achievement, employment, and alternative program entry as problem areas for adults, the ad hoc committee made four recommendations to Advanced Education and Manpower. These recommendations were:

1. That the Minister of Advanced Education and Manpower inquire into and support the development of an adult standard which will be equal in all respects to a high school diploma, or he accept the testing program presently in use in all provinces of Canada except Alberta, Ontario, and Quebec - the General Educational Development Test Program;
2. That the department of Advanced Education and Manpower undertake a rigorous campaign to ensure the recognition of the adult high school equivalency diploma by a wider range of employers

and colleges in the province when matriculation subjects are not a prerequisite of entrance;

3. That 18 years of age be the minimum age of applicants for challenge of the test battery; and
4. That sufficient test centres be designated within the province so this means [the GED tests] of realization of minimal proof of achievement is accessible to all people regardless of geographical residence.

Response to the above recommendations was mixed. College presidents were reluctant to agree to a high school credential that would not necessarily meet specific entrance requirements for their institutions. The issue of whether Advanced Education and Manpower should grant high school equivalency diplomas was resolved, at least temporarily, in early 1978 when the department of Advanced Education and Manpower decided not to establish its own equivalency diploma. The possibility of the introduction of GED testing into Alberta was to be discussed on an on-going basis with Alberta Education. It was also decided in early 1978 to determine the validity and reliability of the GED tests for use with Alberta populations (College Programs Branch - Advanced Education and Manpower, paper, May 1979). The Council of College Presidents, regardless of their earlier response to the recommendations of college counsellors, requested, in early 1979, further study of the use of GED tests in Alberta. There was an indication that the college presidents felt that the GED tests might serve as entrance examinations into at least some of the programs offered by their institutions.

Alberta Education began to investigate the GED testing option by sending a representative to the Conference of GED Administrators in Victoria, B.C. in February 1979 (minutes of the meeting, February 14 - 16, 1979). The Alberta Education representative made numerous requests at the meeting for copies of policy guidelines and regulations used by other provinces in administering the GED Test Program.

On May 24, 1979 a meeting of the departments of Education and Advanced Education and Manpower and represenives of Alberta colleges, vocational centres, and technical institutes was held to discuss high school equivalency credentials for adult students in the post-secondary system. In a memo dated July 9, 1979 from the Deputy Minister of Advanced Education and Manpower to the Deputy Minister of Education, the problems and potential solutions that had been discussed at the May 24th meeting were outlined. According to the Deputy Minister of Advanced Education and Manpower, the basic problem faced by the two departments was that

> students with competencies and knowledge at the grade 10, 11, or 12 level but without an Alberta Education credential (or one as readily recognized) either do not get employment for which they apply or do not bother to apply for employment requiring standings at the 10, 11, or 12 level.

The solution to this problem, as outlined by Advanced Education and Manpower, was to request Alberta Education to develop tests that would measure general knowledge and competency levels, to maintain Alberta norms, and to provide Alberta Education credentials for those individuals whose achievement was deemed appropriate for high school standing. The benefits of this approach were seen to be that a single agency would be responsible for the program, adults would be provided with an incentive to apply to post-secondary programs or to seek employment, and that the tests could serve a diagnostic and placement function for post-secondary institutions. It was assumed by Advanced Education and Manpower that Alberta Education would assume "primary responsibilities for leadership and for funding" of the program.

Program leadership was not, however, something which Alberta Education readily undertook as evidenced by the department's lack of committment to an adult high school equivalency testing program following the May 24th meeting. According to the Assistant Deputy Minister of Alberta Advanced Education, Alberta Education was not inclined to spend the necessary funds on the development of the adult equivalency tests (interview, May 1, 1984). Alberta Education did, however, continue to investigate the feasibility of developing its own high school equivalency tests or using the GED tests. The GED alternative appeared to be equally as unpalatable with Alberta Education officials as the thought of developing a battery of adult high school equivalency tests. These officials were distrustful of the GED tests as valid measures of high school equivalency for the Alberta context due to the American content of the tests.

The Associate Director of the Student Evaluation Branch of Alberta Education recalled no widespread discussion of the equivalency issue within the department but did remember that several Alberta Education officials were concerned that adult high school equivalency was beyond the mandate of the department of Education (interview, May 25, 1984). To these officials, the equivalency program was considered an adult education program and as such the program should be administered entirely by Advanced Education. Advanced Education's request for Alberta Education to develop a set of instruments to assess adult high school equivalency was a way to ensure that at least the GED Test Program, the less costly of the two alternatives, would be accepted by Alberta Education (interview, Assistant Deputy Minister - Alberta Advanced Education, May 1, 1984).

Concerns cited above related to the validity of the GED tests and whether an equivalency program should be considered an adult education program demonstrated that the use of the term 'equivalency' has created some problems. There was a tendency on the part of Alberta Education officials to equate the GED test experience with the high school experience of regular high school graduates. This view of equivalency implies that GED graduates should have abilities and skills similar to those of minimally competent high school graduates. To these officials, then, the Alberta high school program is the measuring stick against which the skills and abilities of GED graduates should be measured. Other individuals associated with the program chose to consider as equivalent the educational development of GED graduates and regular high school graduates. The measuring stick in this instance is the GED test battery. The latter approach seems to be more appropriate given that the scores received by GED candidates are based on norms from a sample of Canadian high school seniors.

In October 1979 a request was received by Alberta Education from the American Council on Education concerning Alberta's participation in a proposed May 1980 Canadian norming study of the GED batteries. The concern was expressed at the time by some Alberta Education officials that such a study would produce Canadian norms only and not provincial norms. Alberta Education, as part of its investigation into the GED tests, agreed to participate in the norming study but asked to be allowed to conduct a separate study in which GED results and school-awarded marks would be compared for a stratified random sample of grade 12 students. The results of this study were reported in January 1981 and are discussed in detail later in this chapter. In the norming study report, Reid (1981) recommended that the GED tests be used in Alberta and listed a number of other requirements related to minimum age, residency, and passing-scores. On the basis of Reid's report and some debate, Alberta Education's Curriculum, Instruction, and Evaluation Committee recommended, in February 1981, to the Deputy Minister of Education that the GED Test Program be adopted by Alberta Education. In a memo dated March 3, 1981 from the Minister of Education to the Minister of Advanced Education and Manpower, the implementation of the GED Test Program was announced. Four policy statements were included in the memo. These statements were:

1. Adults taking the GED tests must be 19 years of age and out of school for at least one academic year;
2. A fee of $10.00 will be charged for writing the tests;
3. The GED tests will be limited to adults who have been resident in Alberta for at least six months prior to application; and
4. Adults must write the entire battery at one administration time.

A public announcement of the creation of the Alberta High School

Equivalency Program was made on June 2, 1981 (news release). This new program was really a combination of the existing Adult High School Equivalency Diploma regulations and the GED Test Program of the American Council on Education. The certificate to be awarded for successful completion of the AHSEP was called the Alberta High School Equivalency Diploma. Discussions between the two departments concerning the specific policies under which the new program would operate continued, however. In another memo (June 17, 1981), the Deputy Minister of Advanced Education recommended to the Deputy Minister of Alberta Education that changes be made to some program policies especially those related to program eligibility. The removal of the residency requirement and the reduction of the minimum age from 19 to 18 years were specific recommendations made. At the same time, the need for grade 10 and 11 equivalency certificates and decentralized administration and scoring was stressed.

Alberta Education agreed in part with the suggested changes (memo from the Deputy Minister of Alberta Education to the Deputy Minister of Alberta Advanced Education, July 14, 1981). Applicants had to be 18 years of age, out of school for at least one school year, and residents of the province at the time of application. Alberta Education refused to incorporate grade 10 and 11 equivalency certificates into the program. The norming studies necessary to establish grade 10 and 11 equivalency levels were not conducted and to their credit Alberta Education did not follow the lead of other provinces that have set grade 11 equivalency at a standard T-score of 43 and grade 10 equivalency at a standard T-score of 41. The difference between 45 and 43 (grade 12 and grade 11 equivalency) is less than the standard error of measurement for the GED tests. Consequently, it would not be advisable to use these cutting scores.

Further discussions established the roles and responsibilities of the two departments with respect to the AHSEP. Colleges and vocational centres (AVCs and the CVC in Slave Lake) were to serve as provincial writing centres for the GED tests. Advanced Education and Manpower was to provide liaison between the colleges and vocational centres and Alberta Education. Alberta Education, through its Student Evaluation Branch, was to enter into a contractual agreement with the American Council on Education to provide administrative and scoring services for the GED tests, to award high school equivalency credentials to successful candidates, to publicize the equivalency program, and to prepare statistical reports for the GED Testing Service of the American Council on Education. Primary financial responsibility for the equivalency program was given to Alberta Education.

Alberta Education's role was seen by that department's officials as one of an external examiner (interview, Associate Director - Student Evaluation Branch, May 25, 1984). Test security, an important issue with ACE, was to be closely monitored by Alberta Education. The tests were to be administered four times a year under these secured conditions. In addition, Alberta Education was to conduct formative evaluations of the program and recommend program changes in consultation with Advanced Education and Manpower. Representatives from both departments were to meet on a regular basis to discuss problems with the program.

From 1981 to the present few changes have been made to the Alberta High School Equivalency Program. One noteworthy change has been the inclusion of a number of 'satellite' writing centres. These satellites were established to meet the special needs of some of the existing writing centres which found that large numbers of their applicants resided in a small local area. A case in point was the creation of a satellite writing centre in Hobbema to serve the needs of the local native population, many of whom had to travel to Red Deer to write the GED tests. Apart from this rather minor change to meet local needs, the Alberta High School Equivalency Program has remained essentially the same since its inception in June 1981.

2. Program Goals, Objectives, and Rationale

Attempts were made early in the study to determine the goals, objectives, and rationale of the Alberta High School Equivalency Program from the perspectives of a number of different groups that are interested in the program. It became clear that an implicit rather than an explicit set of goals and objectives for the program was functioning. No formal statements of goals or objectives for the AHSEP were found in any of the Alberta Education publications related to the equivalency program. Interviews with Alberta Education and Alberta Advanced Education officials and correspondence with staff members of Alberta Vocational Centres, however, suggested a broad range of possible goals and objectives for the equivalency program. The most frequently mentioned program goal was to enhance the educational and vocational opportunities of adults. A total of four interviewees out of 10 gave this as a goal of the equivalency program. Three respondents considered the personal satisfaction of the applicants as a major goal of the program, while two respondents suggested that certification of adult experiences as equivalent to the knowledge and experience of the average high school graduate was a major goal of the equivalency program. Table 1 summarizes the goals and objectives of the AHSEP from the perspectives of Alberta Education and Advanced Education officials and AVC staff. It can be seen that while there was agreement on the part of Alberta Education officials, Alberta Advanced Education officials, and AVC staff regarding the three most important outcomes for adults participating in the program, there was also considerable diversity in the types of outcomes expected by the three groups.

Interviews with Alberta Education and Alberta Advanced Education officials revealed a fairly consistent understanding concerning reasons for the existence of the equivalency program. The Associate Director of the Student Evaluation Branch of Alberta Education maintained that the AHSEP exists to "recognize that adult life experiences have a value" and to "impress upon the community that not all education comes through formal educational experiences" (interview, May 30, 1984). Other Alberta Education officials felt that the equivalency program exists to provide adults with inceased educational and employment opportunities. Both the Co-ordinator of Examination Administration for the SEB (interview, May 25, 1984) and the Alberta Education official responsible for the alternate route of the AHSEP (interview, March 15, 1984) listed further educational and employment opportunities for adults as important reasons for the existence of the equivalency program. Another important reason given for the existence of the AHSEP was that the program gives employers some evidence of the ability of an individual to read, do basic arithmetic, and, to a lesser extent, to write.

Similar sentiments were expressed by members of Alberta Advanced Education and by employees of Alberta Vocational Centres, many of whom

Table 1

Alberta High School Equivalency Program - Goals and Objectives

Goals/Objectives	Frequency	Source
1. To provide an alternate way of obtaining a high school diploma	1	AVC*
2. To provide recognition for skills obtained outside of the formal educational system	1	AVC
3. To provide individuals with a means to enhance their opportunities in academic or vocational areas	2 2	Alberta Education AVC
4. To meet the needs of adults	1	AVC
5. To provide adults with the personal satisfaction of achieving a grade 12 diploma	2 1	Alberta Education AVC
6. To provide adults with a credential that society considers important	1	Advanced Education
7. To certify adults as equivalent in experience and knowledge to the average high school graduate	2	Alberta Education

*AVC = Alberta Vocational Centre

work closely with equivalency program participants. The Assistant Deputy Minister of Advanced Education suggested that the equivalency program exists to provide adults with a credential that society, in general, considers important. The provision of the equivalency credential conveys the impression that life experiences are also important (interview, May 1, 1984). The counsellor at the Community Vocational Centre in Slave Lake, echoed the comments of the Associate Director of Alberta Education's Student Evaluation Branch and also suggested that the program exists to meet the needs of adults by providing them with further educational and employment opportunities (telephone conversation, May 25, 1984). Correspondence with staff members of Alberta Vocational Centres throughout the province revealed similar perceptions regarding the existence of the program.

A review of official publications concerning the Alberta High School Equivalency Program provided no clues as to why the equivalency program exists. The only statement that can be considered descriptive of the rationale of the program was found in the equivalency program brochure published by Alberta Education. This statement is given below.

> Many Albertans who did not complete a formal high school education may have acquired, through years of experience, an educational maturity level equivalent to the minimum requirements of a high school diploma. Alberta Education, in co-operation with Alberta Advanced Education, provides an opportunity for such persons to achieve a High School Equivalency Diploma through the General Educational Development (GED) Test Program. (Alberta Education, 1984, p. 1)

The above statement must be regarded, at best, as a public relations statement and not a reason for the existence of the AHSEP. At the same time, however, it should be pointed out that the American Council on Education (ACE), official sponsors of the GED Test Program, have provided a rationale for the GED Test Program that is consistent with the views of Alberta Education and Advanced Education officials. A review of official publications of the American Council on Education indicated that ACE considers the GED tests and the state and provincial equivalency programs that make use of the tests as being of assistance in helping adults gain "additional educational and vocational opportunities as well as personal satisfaction and accomplishment" (American Council on Education, 1982b, p. I-1). Statements similar to the one just cited were found in a variety of ACE publications ranging from a GED item writers' manual to research studies related to the GED tests.

3. Program Comparison

An attempt was made to determine the comparability of the goals, objectives, and rationale of the Alberta High School Equivalency Program, as outlined above, to those of a similar program in operation elsewhere in Canada. The Manitoba equivalency program was selected for this purpose. Since the inception of the Manitoba equivalency program in 1972, over 17,000 Manitoba adults have acquired high school equivalency credentials.

To compare the Manitoba and Alberta programs, it was first considered important to interview the GED administrator for the Province of Manitoba and gain his perceptions concerning the goals, objectives, and rationale of the Manitoba equivalency program. At the time of the proposed interview, it was revealed that the Manitoba program was undergoing a number of changes and had no permanent administrator. It was decided that the best alternative was to contact the former GED administrator for Manitoba and see if he could provide the necessary information. He agreed to be interviewed and provided information concerning the goals and objectives of the Manitoba program.

As a result of the interview the following three goals for the Manitoba program were revealed.

1. To provide adults with a second chance to receive a high school certificate;
2. To increase job and educational opportunities for adults; and
3. To provide adults with a sense of personal accomplishment.

(interview, former Manitoba GED administrator, July 26, 1984)

Similar goal statements were found in reports of surveys of Manitoba's GED candidates (Manitoba Department of Education, 1981a; 1981b; 1982). These goal statements are not substantially different from those provided by government officials in Alberta. Again, it may be argued whether these are really goals or public relations statements. Regardless, Manitoba equivalency program officials seem to have accepted the idea that an equivalency diploma will assist adults in meeting their educational, vocational, and personal goals.

B. Program Monitoring

1. Assessment of Equivalency

1.1 The GED Test Program

A variety of evaluation questions was asked regarding the GED Test Program component of the Alberta High School Equivalency Program. These questions may be summarized as:

1. Have the GED tests performed at a technically acceptable level in terms of item characteristics such as difficulty and item-test correlation and in terms of test characteristics such as reliability, speededness, and floor and ceiling effects since the inception of the AHSEP?; and
2. What are the weaknesses of GED candidates as revealed by their responses to GED test items?

One of the original intents of this evaluation study was to determine the curriculum validity of the GED Writing Skills, Reading Skills, and Mathematics sub-tests. Closer examination of the tests, and correspondence with the American Council on Education indicated that this approach was inappropriate. The ACE makes no claim for curriculum validity. Rather the GED tests are norm-referenced tests of general educational development and as such are devices designed to separate people whose scores on the tests are equivalent to those of high school graduates from those whose scores are not equivalent.

Since the tests are norm-referenced devices an evaluation of the technical adequacy of the tests for use in the Alberta context was carried out by examining conventional item statistics. Random samples of 200 GED candidates, stratified according to writing centre, were selected from the total populations of GED candidates who had written forms CA, CE, and CH of the GED tests. Table 2 provides a comparative summary of the test statistics produced from the item analyses for these three forms of the GED tests. Sample sizes reported are, in some cases, less than the 200 candidates who were originally selected. The reason for this is that the optical scanner used to read the answer sheets rejected 13 out of the 1800 sheets. These sheets were not re-read.

In general, the analyses of data from samples selected for this study showed that the Writing Skills, Reading Skills, and Mathematics sub-tests of the GED test battery are very reliable. Again, it is important to point out that study of the Natural Sciences and Social Studies sub-tests was considered less important than a study of the 'basic' areas of reading, writing, and mathematics. As a result, the Reading Skills, Writing Skills, and Mathematics sub-tests were the only sub-tests considered.

Item analyses of forms CA, CE, and CH of the GED Writing Skills, Reading Skills, and Mathematics sub-tests revealed a number of items in each of the forms with unacceptable item statistics (from a classical test theory perspective). The frequencies of items with unacceptably low or high difficulty levels and low biserial correlations are given in Table 3. All of the items in each of the sub-tests of the GED test battery have five alternatives. For purposes of this analysis the acceptable range of item difficulty was defined as being between 0.3 and 0.85 while acceptable values for item biserial correlations were those greater than 0.25. In general, 10% or less of the items for any given sub-test were found to have biserial correlations less than 0.25. Very

Table 2

A Comparison of Test Statistics for Three Forms of the GED Tests

Form	n	Number of Items	Mean Item Difficulty	Standard Deviation	Reliability (KR-20)
Writing					
CA	198	80	0.65	0.14	0.89
CE	197	80	0.60	0.16	0.90
CH	200	80	0.66	0.15	0.89
Reading					
CA	199	40	0.80	0.14	0.83
CE	198	40	0.76	0.18	0.87
CH	200	40	0.78	0.15	0.83
Mathematics					
CA	200	50	0.68	0.14	0.83
CE	198	50	0.67	0.17	0.89
CH	197	50	0.67	0.15	0.86

Table 3

Frequencies of Unacceptable GED Item Statistics - Forms CA, CE, and CH

	Frequencies and Percentages			
Form and Subtest	f ($p<0.3$) [%]	f ($p>0.85$) [%]	f ($r_{bis}<0.25$) [%]	# of items
CA				
Writing Skills	2 [2.5]	11 [13.8]	11 [13.8]	23
Reading Skills	0 [0]	24 [60]	2 [5.0]	26
Mathematics	4 [8]	15 [30]	4 [8.0]	22
CE				
Writing Skills	6 [7.5]	8 [10]	10 [12.5]	22
Reading Skills	0 [0]	12 [30]	0 [0.0]	12
Mathematics	4 [8]	13 [26]	1 [2]	18
CH				
Writing Skills	4 [5]	8 [10]	8 [10]	19
Reading Skills	0 [0]	14 [35]	2 [5.0]	16
Mathematics	4 [8]	13 [26]	4 [8]	20

little overlap was found between items with unacceptably low or high difficulties and those with unacceptably low biserial correlations. Only 6 out of 42 items with low biserial correlations also had difficulties that were too high or too low. Table 3 also suggests that Form CA generally performed more poorly than Forms CE or CH, regardless of which sub-test is considered. This fact is especially interesting given that Form CA was used in the Canadian GED norming study in 1980.

Summaries of ranges of item difficulties and biserial correlations are reported in Tables 4 and 5. Table 4 suggests that the Writing Skills sub-tests were found to have a more even distribution of item difficulties than the other sub-tests analyzed. As reported in Table 5, most of the biserial correlations were found to be 0.50 or greater.

The item analyses also revealed that there were certain types of questions that presented problems to GED candidates. Items from each of the sub-tests analyzed were categorized according to errors commonly-made by those writing the tests. Common errors were considered to have occurred in cases where less than one-half of the sample answered an item correctly.

In the case of the three Reading Skills sub-tests, a relatively small number of items (eight in total) met this criterion. This fact can be attributed to a pronounced ceiling effect in the Reading Skills sub-tests which results from the inclusion of a large number of easy items in these sub-tests. Given that the Reading Skills sub-tests were found to be easy by most GED candidates, it was interesting to find that, whenever an item called for more than merely extracting the answer directly from a passage of written material, the majority of GED candidates could not arrive at the correct answer. In short, GED

Table 4

Ranges of Item Difficulties

Sub-test and Form	Item Difficulty Ranges				
	p<0.30	0.30-0.49	0.50-0.69	0.70-0.85	p>0.85
Writing Skills					
CA	2	13	32	22	11
CE	6	13	33	18	10
CH	4	10	29	29	8
Reading Skills					
CA	0	3	7	6	24
CE	0	2	12	14	12
CH	0	3	8	15	14
Mathematics					
CA	4	6	15	10	15
CE	4	7	14	12	13
CH	4	8	10	15	13

Table 5

Ranges of Item Biserial Correlations

Sub-test and Form	Biserial Correlation Ranges			
	<0.20	0.20-0.29	0.30-0.49	0.50 or >
Writing Skills				
CA	4	11	37	28
CE	3	12	35	30
CH	2	14	39	25
Reading Skills				
CA	2	0	7	31
CE	0	1	8	31
CH	0	3	6	31
Mathematics				
CA	3	7	16	24
CE	1	1	6	42
CH	1	8	18	23

candidates had difficulty with questions that dealt with inferential comprehension. These questions generally required GED candidates to select a phrase that was either (1) descriptive of the implied meaning of a written passage, (2) an extrapolation from information in the written passage, or (3) an analysis of the relationships of ideas within the passage. An example of this type of item follows.

Example 1

There was a time when people were actually fascinated by airplanes. They didn't just go from here to there by air, tolerating the three-abreast, elbow-in-your-ribs confinement that passes for air comfort today. The great days of luxury flying began back in October 1936, when a four-engined Martin M-130 flying boat floated at the end of a ramp in Alameda, California. Its destination was Manila in the Philippines, then an incredible 8,210 miles away. The airplane was named the Hawaii Clipper.

It was an appropriate choice. The word "clipper" recalled the romantic aura of tall-masted ships plying the seas a century earlier, carrying travelers to the magic of faraway places. It seemed poetic that one of the last of the sailing clippers, the Star of New Zealand, bobbed calmly at anchor nearby. But the hordes of spectators had come to see the remarkable seaplane--a great silvery brute with a hull 90 feet, 7 inches long and a wingspan of 130 feet. Inside were a fancy lounge and a second cabin that became a comfortable sleeping compartment at night. Although it was the largest commercial airplane of its day, the Hawaii Clipper accepted only 32 fortunate passengers. The "flying miracle" cruised at a speed of 130 miles an hour and could land its pampered occupants on open areas of water anywhere in the world. There was only one way to go on the flying clipper: first class with a flourish.

Which of the following best states the main idea of the passage?

(1) The Hawaii Clipper seemed touched with magic because it could land on water.
(2) The demand to travel on the Hawaii Clipper far exceeded the available passenger accomodations.
(3) Hawaii Clipper was an appropriate name for this airplane.
*(4) The Hawaii Clipper was a magnificent luxury seaplane.
(5) The destination of the Hawaii Clipper was the Philippines.

* keyed answer

Errors commonly made by GED candidates on the Writing Skills sub-tests fit into a number of categories. Also, some differences in the frequency of common errors were noted across the three GED forms used in this study. An examination of Table 6 shows that the sample of GED candidates who wrote the CE Writing Skills sub-test committed a greater number of common errors than did the samples of GED candidates who wrote the CA or CH Writing Skills sub-tests. The percentages of test items on the Writing Skills sub-tests that were answered correctly by less than one-half of the GED candidates were 14% for form CA, 28% for form CE, and 16% for form CH. In general, common errors were committed in 30% or less of the items for a particular test blueprint category. For example, in the test blueprint category labelled 'Spelling' 3 out of 10 items on form CA were answered correctly by less than one-half of the sample of GED candidates.

While few GED candidates had difficulty with the multiple-choice questions on English grammar, it was interesting to find that a number of GED graduates had difficulty in expressing themselves through written communication. The following comment was typical of those received from successful GED candidates who responded to the survey and is presented here as it appeared on the questionnaire.

> I feel the programs is of great value for people that have not completed High School for what ever reason. Like myself with a grade 9 level. Without the Grade 12 Equivalency program, one could not advance in his or her job.

Not all of the comments received from successful GED candidates were as poorly written as the one just given. The written comments did, however, indicate that while most successful GED candidates had little

Table 6

Classification of Common Errors - Writing Skills

Common Errors by Blueprint Category	Frequency by Form		
	CA	CE	CH
Spelling (10 items)			
Double consonants	2	0	0
Vowel combinations	1	0	0
No error	0	1	0
Word endings	0	1	0
Capitalization & Punctuation (10 items)			
Comma placement	2	2	0
Capitalization of improper nouns	1	1	0
No error	0	2	3
Use of colon	0	1	0
Grammar (24 items)			
Subject-verb agreement	2	1	0
Useage	1	3	4
Parallel structure	1	1	0
No error	0	2	2
Sentence Structure (24 items)			
No error	0	0	1
Style	0	4	2
Misuse of modifier	1	1	0
Logic and Organization (12 items)	0	2	1
Total # of items	11	22	12
Percentage of total test	14%	28%	16%

difficulty in passing the Writing Skills sub-test, this fact should not be construed to mean that these individuals are able to effectively communicate in written English. The lack of a writing sample in conjunction with the multiple-choice measure currently employed in the GED test battery represents one of the greatest weaknesses of the GED Test Program.

Errors commonly made by GED candidates on the Mathematics sub-tests were also found to fit into a number of categories. Table 7 provides the classification of common errors made by the GED candidates in the CA, CE, and CH Mathematics samples. In general, it can be seen from the table that the GED candidates had fewer problems with arithmetic and geometry items than they did with algebra items. The percentages of items on the Mathematics sub-test that were answered correctly by less than one-half of the GED candidates were 20% for form CA, 22% for form CE, and 24% for form CH. Only the algebra section of form CH stands out as a problem area. Sixty-seven percent (8 out of 12) of the items were answered correctly by less than one-half of the sample. In other blueprint categories the percentage of items that presented problems for a similar number of GED candidates was generally less than 20%.

Different types of questions presented problems for a small number of candidates in each of the three sample groups. In the case of the form CA sample, items that dealt with right-angle triangles were most-frequently troublesome. For the CE sample, solving algebraic expressions caused the most difficulty. The CH sample had the greatest difficulty with using the co-ordinates of one set of points to solve for distances between other points. Examples of each of these types of items follows.

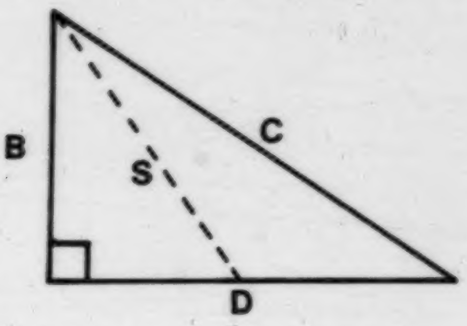
Table 7

Classification of Common Errors - Mathematics

Common Errors by Blueprint Category	Frequency by Form		
	CA	CE	CH
Arithmetic (28 items)			
Squaring numbers	1	0	0
Word problems	2	1	1
Diagram interpretation	1	0	1
Area/volume	0	2	0
Conversion of units	0	1	0
Geometry (10 items)			
Area of polygon	0	1	1
Perimeter	1	0	0
Triangles	3	0	0
Diagonals	0	1	0
Interpretation of graph	0	0	1
Algebra (12 items)			
Word problems	1	0	0
Slope	1	0	1
Co-ordinates of a point	0	1	5
Algebraic expressions	0	3	0
Squaring a number	0	1	1
Ratios	0	0	1
Total # of items	10	11	12
Percentage of total test	20%	22%	24%

Example 2: Triangles

Which of the following formulas could be used to find the area of a right triangle?



(1) A = B + C + D
(2) A = 1/2(B + C + D)
*(3) A = 1/2(BD)
(4) A = CD
(5) A = 1/2(BCD)

* keyed answer

Example 3: Algebraic Expressions

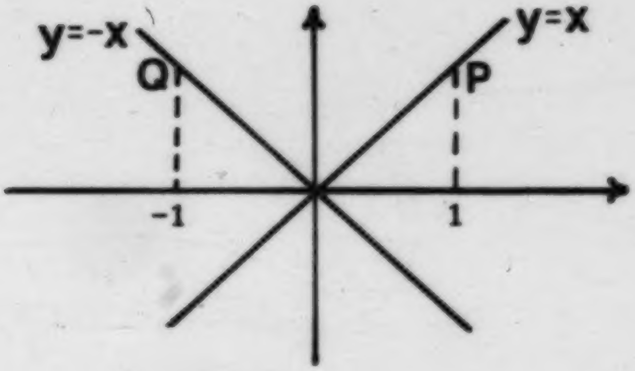
Ellen worked for 2 hours on Friday and 6 hours on Monday and was paid $4 per hour. Which of the following expressions gives the number of dollars she earned?

(1) (4 x 2) + (6 x 2)
(2) (4 x 2) + 6
*(3) 4(2 + 6)
(4) 6(4 + 2)
(5) 2(6 + 4)

* keyed answer

Example 4: Co-ordinates of Points

The following diagram is used to answer the next question.



The distance between the points P and Q shown in the figure above is

(1) 1/2   (2) 1   (3) /2   *(4) 2   (5) 2 /2

* keyed answer

All examples in this section are from the *Item Writers' Manual for the Tests of General Educational Development* published by the American Council on Education (1982b).

To what extent are the GED tests suitable for assessing high school equivalency? Certainly the tests represent a standard way of determining high school equivalency for adults. The tests that were reviewed also appear to provide some evidence of an adult's ability to read and do basic arithmetic and, to a lesser extent, to write. In addition, evidence that will be presented later in this chapter indicates that passing the tests and acquiring a high school equivalency diploma gives the individual a sense of personal satisfaction, one of the most frequently mentioned goals of the program. To some extent, a case may also be made for the relationship of acquiring an equivalency diploma and enhanced educational and employment opportunities (also goals of the program) as will also be shown later in this chapter. It appears, then, that the GED tests are an appropriate tool for achieving the goals and objectives of the AHSEP as outlined by Alberta Education and Alberta Advanced Education officials and AVC staff.

1.1.1 GED norming studies

To answer the question related to the validity of the 1980 Canadian GED norming study required access to the data files from that study. These files were, according to a Senior Research Associate of the GED Testing Service of the American Council on Education, kept by the Educational Testing Service (ETS) following the 1980 study (telephone conversation, April 2, 1984). ETS was responsible for conducting the 1980 norming study as well as for the analysis of the results. Efforts to secure a copy of the norming data file were, unfortunately, not successful. As a result, two summary documents provided the only statistical information available concerning the 1980 norming study. One of these documents was published by Alberta Education and the other by ETS. Reliance on summary reports made it difficult to evaluate the utility of the norming study in establishing passing scores for the GED tests. The information given below was, however, helpful in arriving at some judgements concerning the norming studies. A discussion of the 1980 Canadian norming study is given first followed by a similar discussion of the Alberta GED study.

At the request of the Canadian sponsors of the GED tests, the Educational Testing Service, on behalf of the American Council on Education, conducted a norming study, in 1980, the primary purpose of which was to equate six new forms of the Canadian Social Studies sub-test of the GED test battery. These six new forms were to replace

12 American Social Studies sub-tests that were in use in Canada at the time. GED test administrators from each of the sponsoring provinces (including Alberta for the first time) were responsible for securing a representative sample of grade 12 students to write the norming forms. Eight provinces participated in the study, Ontario and Quebec being the only provinces not involved.

It was discovered that procedures for sample selection for the 1980 norming study in each of the participating provinces were, in all likelihood, different. While it was not possible to determine what sampling procedures were used in each province, several AHSEP administrators stated that arrangements for sample selection were made at the discretion of GED administrators in each of the provinces. In an informal conversation with the GED administrator for British Columbia, this information was confirmed. Different approaches to sample selection may have resulted in problems with the composition of the total Canadian sample and corresponding difficulties with the reliability of the norming data. Reliability of the norming data becomes an issue if GED graduates and regular high school graduates are to be considered equivalent in terms of the scores both groups achieve on the GED tests. Again, without access to the norming data it is difficult to determine how large a problem this may be. The sampling issue was not addressed in the technical report produced by ETS following the norming study.

In the same report, ETS maintained that the tests were "easier than middle difficulty", demonstrated "good discrimination", were highly reliable, and were unspeeded (Educational Testing Service, 1980, p.2). A comparison of biserial correlations as reported by ETS (1980) with those found for a sample of actual GED candidates in Alberta is given in Table 8. In particular, the distributions of biserial correlations of both samples for the Reading Skills sub-tests are quite similar. The mean biserial correlations reported by ETS were 0.43 for Writing Skills, 0.57 for Reading Skills, 0.53 for Mathematics. The mean biserial correlations found for Alberta GED candidates writing the same items were 0.45 for Writing Skills, 0.63 for Reading Skills, and 0.47 for Mathematics.

The forms used in the 1980 norming study correspond to the current form CA tests used by the GED Testing Service of the American Council on Education. A comparison of the test statistics produced from the item analyses of the present study with the test statistics from the 1980 norming study for the Writing Skills, Reading Skills, and Mathematics sub-tests is given in Table 9. The reliabilty coefficients (KR-20) reported by ETS in the norming study are, in general, similar to those found in the present study. The reliability coefficients for both the Reading Skills and Mathematics sub-tests, however, were found to be somewhat lower for the samples of GED candidates than for the norming study sample.

Similar difficulty levels were found for the norming study sample and the GED candidates in terms of the results of the Writing Skills and Mathematics sub-tests. No significant differences on two-tailed $\underline{t}$ tests were found between the mean difficulties on either the Writing Skills ($\underline{t}$ (995) = 0.90, $\underline{p}$ >.05) or the Mathematics sub-tests ($\underline{t}$ (976) = 0.81, $\underline{p}$ >.05) for the two groups. A significant difference was found, however, between the mean difficulties on the Reading Skills sub-test for the two groups ($\underline{t}$ (976) = 6.13, $\underline{p}$ <.01).

Table 8

A Comparison of GED Item Biserial Correlations for the 1980 Norming Sample and Actual GED Candidates

Sub-test	Biserial Correlation Ranges			
	<0.20	0.20-0.29	0.30-0.49	0.50 or >
CA Writing Skills				
Norming sample	1	6	49	22
GED candidates	4	11	37	28
CA Reading Skills				
Norming sample	0	1	9	30
GED candidates	2	0	7	31
CA Mathematics				
Norming sample	0	1	16	32
GED candidates	3	7	16	24

Table 9

A Comparison of Test Statistics for the 1980 GED Norming Study Sample and a Sample of Alberta GED Candidates

Test Form	n	Difficulty	Standard Deviation	Reliability (KR-20)
CA Writing				
GED candidates	198	0.65	0.14	0.89
Norming sample	799	0.66	0.14	0.89
CA Reading				
GED candidates	199	0.80	0.14	0.83
Norming sample	779	0.72	0.17	0.87
CA Mathematics				
GED candidates	200	0.68	0.14	0.83
Norming sample	778	0.67	0.16	0.89

These similar levels of performance for GED candidates and high school seniors may be inferred as supportive of the findings of Sonnenblick (1980), Wilson et al. (1981), and Colert (1983) all of whom maintained that GED graduates should be considered as similar in academic ability to graduating high school seniors. In addition, the fact that the GED candidates performed considerably better on the Reading Skills sub-test than did the norming population of high school seniors may lend some credibility to the argument that adult students should be rewarded for the knowledge that they have acquired through the reading they have done since leaving school.

A report written by Reid (1981) of Alberta Education made reference to Alberta's contribution to the 1980 Canadian GED norming study but provided no details. Reid's report outlined the details of a separate study related to the GED tests that was conducted at approximately the same time as the norming study. Alberta Education received permission from the ACE to administer one of the GED batteries in 31 Alberta high schools for purposes of comparing GED test results and school-awarded marks. A matrix sampling approach was used in conducting the study. Principals in each of the schools chosen for the study were asked to select a stratified random sample of grade 12 students. Students were stratified on the basis of the type of program in which they were registered (eg. matriculation, business, vocational). A total of 1430 students participated in the study. For purposes of analysis, students were further classified on the basis of whether they received a high school diploma at the end of the term in which the study was conducted. No differences were found between non-matriculant diploma and non-matriculant non-diploma grade 12 students on the basis of the average standard scores received on the GED tests. This finding suggests that the GED tests were not useful in discriminating between high school graduates and non-graduates. The validity of equivalency based on the notion that a proportion of GED candidates received scores similar to a group of high school graduates must be questioned under these circumstances.

A number of recommendations were made following the study. Three of these recommendations were of interest in the present study. First, it was recommended that student scores on the GED be converted to a standard T-score (mean = 50, standard deviation = 10) and reported to those writing the tests as a T-score. Second, it was recommended that the norms obtained for the non-matriculant diploma students be used as the basis for converting raw scores to standard T-scores. The mean standard scores for the non-matriculant diploma students were reported as 48 for Writing Skills, 49 for Reading Skills, 48 for Mathematics, 49 for Science, and 49 for Social Studies. It must be pointed out that these T-scores were based on the total sample. As the scores did not deviate far from the mean of 50 it was felt that the non-matriculant norms could be used. Also, the set of mean standard scores for the non-matriculant diploma students was similar to that reported by the GED Testing Service of the American Council on Education (1981) for a sample of U.S. high school seniors.

A third recommendation concerned the establishment of a minimum level of performance for passing the GED tests in Alberta. Reid recommended that a minimum standard score of 45 be established as the passing score for each of the five sub-tests of the GED battery. This recommendation is in line with guidelines established by the Commission on Educational Credit and Credentials of the American Council on Education. The Commission has suggested that passing requirements for the GED battery be at least an average T-score of 45 with no score below 40. The Commission has also stated that "minimum score requirements be set so as to permit only about 70 percent of the recent high school graduates ... to qualify for the credential" (American Council on Education, 1981, p.60). Based on the results of the 1980 Canadian norming study, 69% of the grade 12 sample achieved T-scores of 45 or better on each of the sub-tests of the GED battery.

From the outset, program sponsors had expressed concern over how the passing standard had been established. The passing standard recommended by Reid (1981), and ultimately adopted by Alberta Education, was arbitrary but was based on the advice of the American Council on Education. Why ACE recommends that only 70% of high school graduates should be able to qualify for an equivalency credential was not explained in any of the ACE publications available.

1.2 The Alternate Route to an Equivalency Diploma

The procedures used and criteria applied by Alberta Education officials to award equivalency diplomas to individuals who apply to the Alberta High School Equivalency Program through the alternate route were also studied. Applicants to the alternative route must have a minimum of 60 Alberta high school credits (or the equivalent) through instruction to be eligible for an equivalency diploma. In addition, applicants must have received credits in specific course areas (see Appendix A). A review of 822 applications to the alternate route of the AHSEP found 153 cases where the applicant was denied a high school equivalency diploma due to a failure to meet the high school credit requirement or due to a lack of credits in specific required course areas. The 153 cases represented 83% of all rejections to the alternate route of the program. No evidence was found to suggest that the criteria had been applied inconsistently. Applicants to the alternate route possessed an average of 89 high school credits, with many applicants being only one or two credits short of the required 100 credits for a regular high school diploma.

Through discussions with the Alberta Education official responsible for the alternate route of the AHSEP, procedures used by Alberta Education in relation to the AHSEP were disclosed (interview, March 15, 1984). These procedures will now be discussed for each of the criteria used in the awarding of an equivalency diploma by the alternate route.

1. High school credits received through instruction

The Student Evaluation Branch of Alberta Education obtains transcripts from the Computer Systems and Data Base Management Branch of Alberta Education for those applicants who have received high school instruction in the Province of Alberta. Applicants with out-of-province or out-of-country high school records must submit an official copy of their high school record for evaluation by Alberta Education. Transcripts from other Canadian provinces are reviewed by Student Evaluation Branch officials while foreign transcipts are reviewed by members of the Computer Systems Branch. Using a set of rules that have been adopted by the two branches, the high school records of applicants are translated into Alberta high school credits. All transcripts are screened to determine whether applicants meet the specific course requirements of the alternate route (see Appendix A).

2. Adult education credits

Applicants may receive up to 15 credits towards an equivalency diploma for adult education courses they have taken. To be eligible for these credits applicants must provide Alberta Education with a certificate of attendance or completion for the courses they have taken. In most circumstances, five credits are awarded for 100 hours of instruction.

3. Maturity credits

Applicants are automatically awarded credits based on the following scale: age 21 to 24 - 5 credits, age 25 to 29 - 10 credits, and age 30 and over - 15 credits. For those applicants who have taken high school instruction in Alberta at some time in the past, the age of the applicants is given by their Alberta Education identification number. Other applicants must submit transcipts with their birthdate on them and are then given an identification number.

4. Extensive travel credits

At the time of the inception of the AHSEP, no indication was given by Alberta Education concerning how credits for extensive travel would be awarded. The Alberta Education staff member responsible for this part of the program was left to devise a way to award these credits. Under his system, applicants must submit, along with their application to the program, a letter in which they outline their travel experiences. Credits are then awarded based on how extensively they appear to have travelled. Essentially applicants must try to convince the reader of their applications that they have actually had the experiences they purport to have had. If the Alberta Education official is convinced, credits are awarded on the following bases: one credit for travel throughout Alberta, two credits for travel elsewhere in Canada, three credits for travel throughout North America, and additional credits, to a maximum of five credits, for travel to other continents. Passports may be required as proof of extensive travel in cases where an applicant's letter raises questions concerning the authenticity of the travel experiences.

5. Extensive reading/private study credits

The awarding of credits under this criterion is also done in an ad hoc manner. Applicants are asked to list the type of reading they have done over the past year and to describe, in some detail, one or two of the books they have listed. Normally a list of 8 to 10 novels (or a similar volume of reading in another area) and a good description of two of the books is sufficient to be awarded five credits. Private study may include reading associated with learning to program a computer, to build a boat, or to play the guitar, to name but a few areas of private study that applicants have used. Study for high school credits, such as those earned through academic upgrading courses, is not acceptable.

The finding that extensive travel and reading credits are awarded as a result of an ad hoc decision by one individual is a concern. To be fair, applicants should know what is expected of them prior to application. Currently this is not the case. Applicants do not really know what is meant by extensive travel and reading. The argument against informing applicants of what is expected of them is that they may fabricate a response to meet the criteria. The solution may be to eliminate the credits for extensive travel and reading. This would not only solve the problem of how to evaluate these experiences but would also increase the validity of this route of the equivalency program in the eyes of employers, many of whom were astounded to find out that high school credits could be awarded in this manner. Elimination of these credits would thus serve to increase the credibility of the equivalency program. Automatic credits for age are, of course, subject to the same kind of criticism. The awarding of these credits must also be questioned.

In addition to his comments about the alternate route of the equivalency program, the Alberta Education official responsible for this part of the AHSEP also had some general comments concerning high school equivalency. Based on his experience with the program, most of the applicants to the alternate route of the AHSEP are awarded equivalency diplomas on the basis of previous high school credits earned plus credits for their age. The Alberta Education official maintained that applicants to the alternate route are academically stronger than applicants to the GED Test Program. He also stated that the alternate route provides Alberta Education with a better indication of the writing ability of this group of people than the GED tests do. In cases where applicants are a few credits short of an equivalency diploma, applicants are encouraged to take courses to gain the required credits rather than take the GED tests. The GED is only recommended in cases where taking the courses would present a hardship (eg. loss of job) for the applicant.

One other observation in connection with the alternate route is in order. As was noted in the section of this chapter dealing with the historical background of the AHSEP, some officials of Alberta Education believe that the high school curriculum is the measuring stick against which the performance of adults seeking an equivalency diploma should be measured. If this is the meaning that Alberta Education officials wish to attach to the term 'equivalency' then specific course requirements for the alternative route should reflect the current minimal requirements for a high school diploma. At the present time the alternate route does not require a high school social studies course but the diploma requirements for regular high school students indicate that one must be taken. Careful monitoring of changing diploma requirements would seem to be a necessity if Alberta Education wishes to regard the two credentials as equivalent in the manner just described.

To what extent may the alternate route of the AHSEP be considered a suitable method of assessing adult high school equivalency? With respect to the goals, objectives, and rationale of the AHSEP, the alternate route appears to be an acceptable way of assessing equivalency. Evidence presented later in this chapter suggests that individuals who acquire an equivalency diploma through the alternate route experience enhanced feelings of personal satisfaction and to some extent, improved educational and employment opportunities. Regardless, the alternate route does not represent a standardized way of assessing equivalency as does the GED Test Program. Awarding credits for age, extensive travel, reading and private study results in a series of individual decisions which mitigate standardization. The lack of standardization that is introduced by the alternate route severely limits this method's suitability as a way of assessing high school equivalency.

2. Characteristics and Perceptions of Program Applicants

Two program monitoring questions dealt with the characteristics of equivalency program participants and differences among various sub-populations of the equivalency population. Specifically, these questions were:

1. What are the characteristics of the population of equivalency program applicants in terms of their age, sex, previous highest level of education, reasons for application, expectations for help through the program, perceptions of actual help received, levels of employment, and educational activities?
2. Are there any differences between successful GED applicants, non-successful GED applicants, and non-GED program applicants?

It was considered important to determine the characteristics of the equivalency population for two reasons. First, an assessment of the extent to which the program was reaching the population it was intended to reach could be made if the attributes of the population were determined. Second, and more importantly, an understanding of the nature of the program's participants, when added to information from employers and post-secondary institutions, provided evidence on whether the implicit set of goals and objectives of the program, as discussed earlier, had been met.

Characteristics of the equivalency program population were determined through a survey of a random sample of 600 equivalency program applicants. These applicants were equally distributed among three groups - successful GED applicants, non-successful GED applicants, and non-GED applicants. A complete summary of the responses to all questionnaire items is provided in Appendix I. Of the 600 questionnaires mailed, 75 or 12.5% could not be delivered. A total of 323 or 61.3% of the questionnaires were completed by subjects in the sample and returned. The highest rate of return was for the non-GED group where 133 out of 190 surveys or 70% were returned. For the successful GED group 113 out of 168 questionnaires were returned representing a return rate of 67%. The non-successful GED group returned only 77 out of 167 questionnaires for a return rate of 46%. The response rates reported above were higher than response rates for similar studies reported in the literature. Cervero and Peterson (1982), for example, reported a response rate of 24% for their survey of GED candidates.

The sections that follow consider the results of survey questions related to a number of important variables. Comparisons of the results of this and similar surveys conducted in Manitoba are also presented.

2.1 Age, Sex, and Highest-Grade-Completed

Sex, age, and highest grade summaries are reported in Table 10. It is interesting to note that the lowest mean age was found for the non-successful GED group. This group was significantly younger (post-hoc Scheffe contrast, $p < .05$) than either of the other two groups suggesting that individuals who were closer in time to having attended school were also the least successful in terms of the GED experience. (The analysis of variance summary table is shown in Appendix J. $F\ (2, 320) = 6.42$, $p < .01$)

A significant difference among the three groups was also found for

Table 10

Characteristics of Equivalency Program Applicants

Characteristic	Group			
	Successful GED	Non-successful GED	non-GED	Total
Sex				
Percentage male	46.9	46.8	48.9	47.7
Percentage female	53.1	53.2	51.1	52.3
Mean Age in Years	32.7	28.3	31.6	31.2
Mean Highest Grade Completed	10.0	9.8	11.3	10.5

the highest-grade-completed variable (_F (2, 320) = 69.71, p <.001). Post-hoc Scheffe contrasts of group means revealed significant differences between the successful GED and non-GED groups and between the non-successful GED and non-GED groups (p < .01). (The analysis of variance summary table is shown in Appendix K.)

In general, the AHSEP participants were found to be similar to individuals who have participated in other equivalency programs. In particular, those who had written the GED tests displayed characteristics similar to GED candidates from other states and provinces. For example, the mean grade level completed by the Alberta sample was found to be grade 10, a level widely reported in the literature for different GED populations (Malizio & Whitney, 1981; Moore, 1982; Swarm, 1981). In addition, the mean grade level found for the non-GED group seems to corroborate findings reported earlier in this chapter concerning the number of high school credits earned by the non-GED group. More will be said later in this chapter concerning the relationships of age and grade level to GED scores.

2.2 Other Background Variables

Other important areas surveyed concerned the reasons individuals chose to apply to the equivalency program, the expectations of applicants prior to applying to the program, perceived benefits applicants have received since going through the program, and the employment and educational activities of applicants.

2.2.1 Reasons for applying to the program

As can be seen in Table 11, most applicants, regardless of the sample group considered, applied to the program to improve their educational opportunities, to improve their chances of getting a better

Table 11

Reasons for Applying to the AHSEP

	Group		
Reason	Successful GED [f(%)]	Non-successful GED [f(%)]	non-GED [f(%)]
To improve educational opportunities	55(48.7)	34(44.2)	73(54.9)
To improve chances of getting a better job	54(47.8)	39(50.6)	60(45.1)
For personal reasons	26(23.0)	14(18.2)	65(48.9)
To improve chances of getting a promotion	12(10.6)	8(10.4)	22(16.5)

job, or for personal reasons. The response category 'personal reasons' was cited by the non-GED group more often than by the other groups as a rationale for applying to the equivalency program.

It is important to note that the reasons given by respondents are closely related to the goals and objectives outlined for the program by government officials and AVC staff. Also, the major reasons for applying to the equivalency program as reported by program participants were found to be the same as those given by applicants to other equivalency programs. Cervero and Peterson (1982), Malizio and Whitney (1981), Swarm (1981), and the Province of Saskatchewan (1982) all reported increased vocational and educational opportunities and personal satisfaction as reasons given by people who wish to acquire an equivalency diploma.

2.2.2 Expectations and benefits

Discrepancies between pre-program expectations and perceived post-program "benefits" were found in the present study just as these discrepancies have been found for participants in other equivalency programs (Cervero & Peterson, 1980; Malizio & Whitney, 1981; Province of Saskatchewan, 1982; Swarm, 1981). As can be seen in Tables 12, 13, and 14, the three most frequently-mentioned expectations reported by individuals in the three groups were that the equivalency diploma would help them to get a job, that the diploma would help them to be admitted to an educational institution, and that the diploma would help them in a personal way. By contrast, the three most frequently-mentioned post-program benefits were that the equivalency program had made no difference to the respondent's job situation, that the program had not helped them in any way, and that the program had provided the

Table 12

A Comparison of Prior Expectations and Post-program Benefits - Successful GED Group (n=113)

Area of Benefit	Prior Expectations [f(%)]	Benefits [f(%)]
Help in getting a job	49(43.4)	12(10.6)
Help in getting a promotion	17(15.0)	4 (4.4)
Help in keeping present job	6 (5.3)	5 (4.4)
Help in getting a raise	5 (4.4)	5 (4.4)
Make no difference to job situation	23(20.4)	52(46.0)
Help in being accepted into an apprenticeship program	15(13.3)	2 (1.8)
Help in being accepted into an educational institution	43(38.1)	14(12.4)
Make no difference to educational opportunities	5 (4.4)	13(11.5)
Not help in any way	2 (1.8)	24(21.4)
Help in a personal way	45(39.8)	27(23.9)

Table 13

A Comparison of Prior Expectations and Post-program Benefits - Non-successful GED Group (n=77)

Area of Benefit	Prior Expectations [f(%)]	Benefits [f(%)]
Help in getting a job	41(53.2)	3 (3.9)
Help in getting a promotion	13(16.9)	1 (1.3)
Help in keeping present job	1 (1.3)	2 (2.6)
Help in getting a raise	0 (0.0)	1 (1.3)
Make no difference to job situation	6 (7.8)	26(33.8)
Help in being accepted into an apprenticeship program	22(28.6)	1 (1.3)
Help in being accepted into an educational institution	31(40.3)	9(11.7)
Make no difference to educational opportunities	4 (5.2)	12(15.6)
Not help in any way	0 (0.0)	30(39.0)
Help in a personal way	25(32.5)	5 (6.5)

Table 14

A Comparison of Prior Expectations and Post-program Benefits - Non-GED Group (n=133)

Area of Benefit	Prior Expectations [f(%)]	Benefits [f(%)]
Help in getting a job	44(33.1)	11 (8.3)
Help in getting a promotion	28(21.1)	5 (3.8)
Help in keeping present job	10 (7.5)	4 (3.0)
Help in getting a raise	4 (3.0)	4 (3.0)
Make no difference to job situation	30(22.6)	46(34.6)
Help in being accepted into an apprenticeship program	24(18.0)	5 (3.8)
Help in being accepted into an educational institution	50(37.6)	21(15.8)
Make no difference to educational opportunities	5 (3.8)	8 (6.0)
Not help in any way	6 (4.5)	26(19.5)
Help in a personal way	39(29.3)	30(22.6)

respondents with other benefits of a primarily personal nature.

Did their participation in the equivalency program help the respondents to gain access to post-secondary education? The majority of respondents in all groups reported that they had not applied for admission to any educational institutions or on-the-job training programs since participating in the equivalency program even though they listed this as a way in which the equivalency program could be expected to be of help. In all cases at least two-thirds of those responding had not applied for post-secondary admission. Table 15 presents a summary of the educational activities of the sample of equivalency program applicants since their participation in the program. Twenty percent of the successful GED applicants, 14% of the unsuccessful GED applicants, and 29% of the non-GED group reported that they had participated as either full- or part-time students at an educational institution at some time since going through the equivalency program.

The employment status of the three groups in the sample appears to have undergone some slight changes from the time of application to the program until the time of the survey. Comparative summaries of the employment status' for the three groups both before and after their participation in the equivalency program are presented in Tables 16, 17, and 18. All groups experienced slight increases in the number of individuals who were either employed full-time for pay or part-time for pay since participating in the program.

Unlike the Behal (1983) study in which high levels of unemployment were reported for all GED candidates, the present study found only non-successful GED candidates to have an unusually high level of unemployment. Thirty-nine percent of the people in the non-successful

Table 15

Educational Activities of Equivalency Program Participants

Educational Activity	Group		
	Successful GED [f(%)]	Non-successful GED [f(%)]	non-GED [f(%)]
Acceptance by a(n)			
community college	6 (5.2)	9(11.7)	13 (9.8)
educational consortium	2 (1.7)	1 (1.3)	2 (1.5)
university	8 (7.0)	0 (0.0)	9 (6.8)
technical school	8 (7.0)	1 (1.3)	7 (5.3)
apprenticeship program	7 (6.1)	1 (1.3)	7 (5.3)
Application to an educational program	6 (5.2)	9(11.7)	7 (5.3)
No applications for admission to any educational programs	78(67.8)	51(66.2)	88(66.2)
No response	0 (0.0)	5 (6.5)	0 (0.0)

Table 16

Employment Status of Equivalency Program Participants - Successful GED Group

Level of Employment	Frequencies and Percentages	
	Before Program [f(%)]	At Present [f(%)]
Employed		
Full-time for pay	60(53.1)	66(58.4)
Part-time for pay	15(13.3)	14(12.4)
Unemployed		
Not looking for work	9 (8.0)	3 (2.7)
Looking for work	18(15.9)	17(15.0)

Table 17

Employment Status of Equivalency Program Participants - Non-successful GED Group

Level of Employment	Frequencies and Percentages	
	Before Program [f(%)]	At Present [f(%)]
Employed		
Full-time for pay	28(36.4)	33(42.9)
Part-time for pay	9(11.7)	6 (7.8)
Unemployed		
Not looking for work	12(15.6)	5 (6.5)
Looking for work	18(23.4)	25(32.5)

Table 18

Employment Status of Equivalency Program Participants - Non-GED Group

Level of Employment	Frequencies and Percentages Before Program [f(%)]	 At Present [f(%)]
Employed		
Full-time for pay	73(54.9)	77(57.9)
Part-time for pay	14(10.5)	17(12.8)
Unemployed		
Not looking for work	12 (9.0)	9 (6.8)
Looking for work	24(18.0)	18(13.5)

GED group said they were unemployed before applying to the program, approximately the same percentage as after they had participated in the program. This finding may, however, be more a function of the age of the non-successful GED candidates than the fact that they failed the tests. The non-successful GED candidates tended to be younger than either the successful GED candidates or the non-GED program applicants. Unemployment for those under 25 years of age is known to be significantly higher than for any other age group at the present time. This younger group also has less job market experience and it may be, as Dhanidina and Griffith (1975) have pointed out, that success in the job market is more a function of past success than of having an equivalency diploma.

It is interesting to note that the successful GED and the non-GED groups were found to have unemployment rates of about 25% before the program and less than 20% after the program. On many of the questionnaires, individuals who were not looking for work indicated reasons (e.g: they had become full-time homemakers, they were in jail). If only the unemployed who sought work are considered, the non-successful GED group has an unemployment percentage that is over twice as great as the other two groups.

Unemployment in Alberta gradually rose from 4.5% in December 1981 to 11.1% in December 1983 (telephone conversation with Statistics Canada official). Thus, at a time when general levels of unemployment increased substantially, the unemployment rates of equivalency program participants actually declined. It may be that acquiring an equivalency diploma helped some individuals to find new employment. It is also possible that the changes in employment data may reflect some general motivational factor rather than a causal factor. The acquisition of an equivalency diploma may have provided some individuals with the impetus to seek out new employment. This conclusion is evidenced by a shift in some of the employment data. For example, the percentage of individuals in the non-successful group who reported that they were unemployed but not looking for work declined from 15.6% to 6.5%.

Subjects were also asked about changes in their income since applying to the equivalency program. Of particular interest were those individuals whose income had increased during this time period. Thirty-eight percent of the successful GED group, 12% of the non-successful GED group, and 26% of the non-GED group reported an increase in their incomes. The two most frequently-mentioned reasons for the increases were automatic annual raises received by the subjects (42% - successful GED; 56% - non-successful GED and non-GED) and better pay due to work at a new job (40% - successful GED; 33% - GED non-successful; 27% - non-GED). A total of 6 out of 86 of the subjects who reported an increase in income since participating in the program selected the equivalency program as the reason for the increase.

It appears reasonable to suggest that personal benefits outweighed education- and job-related benefits according to the equivalency program participants who were surveyed. Self-satisfaction was the most frequently reported personal benefit. This finding is related to but somewhat different from findings reported in the literature. Enhanced self-image or self-confidence is the most frequently mentioned personal benefit of equivalency program participation mentioned in the literature (Cervero & Peterson, 1981; Fischer & Evanson, 1979; Harris et al., 1983; Waller, 1976). The discrepancy between the present study and those just cited may have arisen as a result of the differing manners in which data were gathered. Many surveys of GED candidates ask these individuals if they feel that their self-confidence or self-image has improved as a result of the GED experience thereby increasing the likelihood of identifying this as a benefit. In the present study, participants were free to volunteer how they believed the equivalency program had helped them. The importance of self-concept was, nonetheless, evident just as it has been demonstrated to be an important component of adult education programs in general by Wilson (1979; 1980) and Rolfe and Wilson (1979).

2.3 Other Survey Results

Subjects in the sample were also asked how they had heard about the equivalency program and who encouraged them to apply to the program. Program participants from all groups indicated, in general, that they heard about the program through a friend or relative, through their local newspaper, or through the Alberta government employment flyer, The Bulletin. Employers were reported to have informed only 14 out of the 323 respondents about the program.

Survey subjects were also asked to comment on the Alberta High School Equivalency Program and/or the GED tests, indicating any impact that the program may have had on their lives. The responses given by the subjects were reviewed and the major themes of each comment categorized. Positive comments either referred to how valuable the individual felt the program is or to personal benefits that had been derived as a result of participation in the program. The positive comments concerning the equivalency program made by even the non-successful GED candidates were supportive of Massaro's (1978) finding that even GED failures look upon education in a more positive light as a result of their experience with the program.

Negative comments concerning the equivalency program were found to be more diverse. Respondents indicated their displeasure with the utility of the program in helping them to get into post-secondary programs and to find better jobs. Lack of recognition of the credential was typically cited as a source of concern. Table 19 presents a summary of the frequencies and percentages of comments received from members of the three groups surveyed. Although a small number of respondents made more than one comment, a single major theme for each of the comments received is represented in the categories found in Table 19. Individual respondents are, therefore, represented only once in the table.

2.4 Exploratory Analysis of the Survey Data--All Groups

The survey data just described and the literature reviewed earlier indicated the possibility of some interesting relationships between and among the three groups across a number of the variables on which data were gathered. Consequently, several two- and three-way contingency tables were generated to study relationships between frequently-selected questionnaire responses and demographic variables associated with the three groups. Contingency tables were also created to consider possible relationships between and among the demographic variables. In the discussion that follows, $\underline{\chi^2}$ values for statistically significant relationships are given. Non-significant values are found in Appendix L.

2.4.1 Sex differences

In general, it was not possible to differentiate the responses of subjects based on their sex. No differences were found between males and females in terms of the highest grade they reported having

Table 19

Respondents' Comments Concerning the AHSEP

Comment	Group		
	Successful GED [f(%)]	Non-successful GED [f(%)]	Non-GED [f(%)]
Positive			
Personal value			
Self-satisfaction	20(17.7)	1 (1.3)	27(20.3)
Increased self-confidence	11 (9.7)	4 (5.2)	4 (3.0)
Increased self-esteem	9 (8.0)	0 (0.0)	4 (3.0)
Valuable program in general	34(30.1)	16(20.8)	43(32.3)
Other positive	5 (4.4)	4 (5.2)	3 (2.3)
Negative			
Program not helpful	10 (7.8)	5 (6.5)	10 (7.5)
More advertising needed	0 (0.0)	2 (2.6)	3 (2.3)
No comment	24(21.2)	35(45.5)	33(24.8)

completed, the reasons they applied to the equivalency program, or their expectations prior to applying to the program. Prior employment status and present employment status were found to be related for both males ($\chi^2(16, n = 154) = 70.99, p < .001$) and females ($\chi^2(25, n = 169) = 263.97, p < .001$). Closer examination of the tables revealed that little change had occurred in the employment status of males or females since they applied to the equivalency program.

2.4.2 Time since applying to the program

The amount of time that had lapsed since applying to the program was thought initially to be related to the benefits that program applicants would derive from their participation. Presumeably, the longer it had been since applying to the program the greater the chances that individuals would have actually received some benefit. It was also not possible, however, to differentiate the responses of subjects based on how long it had been since they had applied to the program. No relationship was found between the length of time since applying to the equivalency program and perceived educational and employment benefits or between the length of time since applying to the program and acceptance by an educational institution or on-the-job training program. So for these variables there did not seem to be any delayed effect arising from completion of the program. Prior and present employment status were found to be related regardless of when participants had applied to the program [less than six months ($\chi^2(25, n = 108) = 260.5, p < .01$), 6 to 12 months ($\chi^2(20, n = 102) = 92.8, p < .01$), 13 to 18 months ($\chi^2(12, n = 51) = 33.4, p < .01$), 19 to 24 months ($\chi^2(16, n = 28) = 30.0, p < .05$), more than 24 months ($\chi^2(12, n = 34) = 22.9, p < .05$)].

2.4.3 Highest-grade-completed

The highest-grade-completed variable is one widely reported in the literature on the evaluation of American and Canadian equivalency programs. This literature suggested that it might be possible to distinguish the responses of questionnaire respondents based on their grade level prior to applying to the equivalency program. Within this context, acceptance by a post-secondary institution or on-the-job training program was found to be independent of the highest grade completed as reported by the subjects in the survey. It was also not possible to distinguish the responses of subjects to questions dealing with their reasons for applying to the program based upon the highest grade the respondents reported having completed. A relationship between the expectation of improved chances of getting a job and perceived help in getting a job was found for two of the grade-level groups [grade 11 (χ^2 (1, n = 111) = 8.46, $p < .01$), grade 12 (χ^2(1, n = 71) = 13.2, $p < .01$)].

2.4.4 Variables related to the age of AHSEP participants

Some of the literature pointed to the age of GED candidates as an important variable which may explain, in part, their perceptions concerning the equivalency program. In the present study, the age category that program applicants belonged to seemed to influence the reasons they gave for applying to the program. In general, younger applicants were more interested in job and educational opportunities while older applicants were participating in the program to a greater extent for personal reasons. Respondents who were less than 40 years of age were more likely than those over 40 to have applied to the program to improve their educational opportunities (χ^2(6, n = 323) = 13.54, p

$<.05$). Similarly, respondents in the 19 to 25 age group were more likely than any of the other age groups to have participated in the program because they wanted to improve their chances of getting a better job ($\chi^2(6, n = 323) = 17.59, p < .01$). There seemed to be a desire on the part of the over 40 age group to acquire a diploma simply so that they could say they had one, regardless of its utility. It may be part of the belief system of this older group that a high school diploma has an inherent value.

Divergent findings concerning the reasons that people of various age groups give for wanting to have an equivalency diploma were not unexpected; Harvey (1978), Russ-Eft and Steel (1980), and Cross (1981) have all found that differential motivation in adult education programs is a function of age.

Age group membership also differentiated respondents in terms of the relationship of prior expectations and perceived post-program benefits. The responses of individuals in the 19 to 25 age group demonstrated a relationship between their expectations of improved chances of getting a job and perceived help in getting a job ($\chi^2(1, n = 104) = 9.5, p < .01$). A relationship between the expectation of improved chances of being admitted to an educational institution and perceived help in being admitted to an educational institution was found for all age groups below the 40 to 49 age group [19-25 years old ($\chi^2(1, n = 104) = 14.9, p < .01$), 26-29 years old ($\chi^2(1, n = 61) = 6.8, p < .01$), 30-35 years old ($\chi^2(1, n = 68) = 13.9, p < .01$), 36-39 years old ($\chi^2(1, n = 33) = 4.8, p < .05$)].

2.4.5 Differences in expectations and benefits

Differences among the three groups (in addition to those reported earlier for age and highest-grade-completed) were found on the relationship of prior expectations and perceived post-program benefits. For example, no relationship was found for the non-successful GED group between the prior expectation of getting a job and the perceived post-program benefit of help in getting a job. A relationship between the expectation of help in getting a job and perceived help in getting a job was found for the other two groups [successful-GED ($\chi^2(1, n = 113) = 7.0, p < .01$), non-GED ($\chi^2(1, n = 133) = 15.4, p < .01$)]. Perhaps acquiring an equivalency diploma gave individuals in the successful-GED and the non-GED groups the impression that having the diploma was of assistance in gaining employment.

Prior and present employment status were found to be related for all groups [successful-GED ($\chi^2(25, n = 113) = 167.2, p < .01$), non-successful GED ($\chi^2(16, n = 77) = 54.8, p < .01$), non-GED ($\chi^2(20, n = 133) = 208.9, p < .01$)]. These findings again suggest that little change in employment status has occurred since the time that subjects in any of the groups applied to the program.

2.5 Exploratory Analysis of the Survey Data--GED Groups Only

2.5.1 Scores on the GED tests and age

Differences among the GED scores of four age groups of GED candidates (19-25, 26-30, 31-40, 41 and older) were also studied. Differences between the two GED groups were not studied concomitantly with age as the number of non-successful GED candidates in some of the age categories was deemed too small to warrant a two-way analysis. Consequently, the two GED groups were pooled and a one-way multivariate analysis of variance of the vectors of the five GED sub-test scores for individuals in the four age groups was conducted. This analysis resulted in an overall significant difference among the four groups. Wilk's Lambda was found to be 0.839 (Rao's approximate F (15, 502.8) = 2.20, $p < .01$). Contrasts of the sub-test vectors for each of the groups revealed that the vector of the 19 to 25 year-old group was significantly different from that of the 26 to 30 year-old group (Wilk's Lambda = .897, Rao's approximate F (5, 182) = 4.17, $p < .01$), the 31 to 40 year-old group (Wilk's Lambda = .918, Rao's approximate F (5, 182) = 3.26, $p < 0.01$), and the over 40 year-old group (Wilk's Lambda = .939, Rao's approximate F (5, 182) = 2.38, $p < .05$). No other significant differences were found among pairs of group vectors.

The overall significant difference in GED test score vectors that is reported above for the youngest age group (19 - 25 years of age) when compared to each of the other age groups lends some support to the notion that the GED tests may be measuring a construct that GED test developers have labelled 'educational development'. If this is the case, Modjeski and Michael's (1978) finding that age is uncorrelated with GED test performance must be questioned. The difference between the findings of the present study and those of Modjeski and Michael may lie in the different analyses conducted in each case. Modjeski and Michael correlated age with each of the five GED sub-test scores and found no significant relationships. In the present study, however, the scores on the GED sub-tests were treated as a vector for each individual. The sub-test score vectors for individuals in different age groups were then compared to see which groups differed from one another. Also, Modjeski and Michael dealt with a GED population that consisted exclusively of army personnel and not a general population as was the case in this study.

It can be seen from Table 20, which provides a breakdown of the sub-test means for each of the four age groups, that, in general, the 19 to 25 year-old group had the lowest mean score on each of the five sub-tests. The over-40 age group had the next lowest set of sub-test means, followed by the 31 to 40 year-old group. The 26 to 30 year-old group had the highest mean score on each of the five sub-tests of the GED battery. This ordering of sub-test means is consistent with the finding that GED failures were found primarily in the youngest age category.

2.5.2 Scores on the GED tests and grade level

The respondents from the two GED groups were also divided into four groups according to the highest grade they reported having completed. Again, a one-way multivariate analysis of variance was conducted as some of the grade level categories for the non-successful GED group contained too few individuals to warrant a two-way analysis. The one-way MANOVA of the vectors of the five GED sub-test scores for individuals in the four grade groups (grades 9 or less, 10, 11, and 12) resulted in no overall significant differences among the four groups (Wilks Lambda = .874, Rao's approximate $\underline{F}$ (15, 502.8) = 1.68, $\underline{p} > .05$). The work of Modjeski and Michael (1978), therefore, was supported for the relationship of GED test scores and the highest-grade-completed variable. Thus, the grade level completed by a GED candidate seems not to have a bearing on how well the individual does on the GED tests. The self-report nature of the grade level statistics does, however, temper this conclusion.

A breakdown of the sub-test means for each of the four grade groups also revealed an interesting pattern. As can be seen from Table 21,

Table 20

GED Sub-test Means for Four Age Groups of GED Candidates

Age Group	GED Sub-test Means				
	Writing	Social Studies	Science	Reading	Math
25 or less (n = 69)	48.4	48.6	50.6	51.2	48.0
26 to 31 (n = 39)	54.6	57.5	56.8	57.6	53.0
31 to 40 (n = 51)	52.7	55.9	55.8	57.5	53.1
Over 40 (n = 31)	51.5	54.9	53.7	54.8	52.4
$\bar{x}$ =	51.3	53.4	53.8	54.8	51.1

Table 21

GED Sub-test Means by Highest Grade Completed by GED Candidates

Highest Grade Completed	GED Sub-test Means				
	Writing	Social Studies	Science	Reading	Math
Grade 9 or less (n = 72)	48.8	51.2	51.5	52.6	48.5
Grade 10 (n = 55)	52.2	54.5	54.8	55.6	52.4
Grade 11 (n = 47)	55.3	56.7	57.0	58.2	54.0
Grade 12 (n = 16)	48.7	50.1	51.1	51.4	49.9
$\bar{x}$ =	51.3	53.4	53.8	54.8	51.1

those individuals who reported having completed grade nine or less prior to writing the GED tests had, in general, the lowest scores on each of the subtests. By contrast, those who reported having completed grade 11 prior to writing the GED tests had the highest scores on each of the sub-tests. The mean sub-test scores for the group of individuals who reported that they had completed part of grade 12 prior to applying to the program were, in general, lower than the sub-test means for the three other grade groups. As the grade level variable is a self-report measure, it is quite likely that a number of the individuals who reported having completed grade 12 prior to applying to the equivalency program actually misread the question. Instead of reporting the highest grade they had completed prior to applying to the program these people may have reported their grade level after completing the equivalency program.

2.6 Program Comparison

A comparison of the results just cited and those found in Manitoba (Manitoba Department of Education, 1981a, 1981b, 1982) showed that the characteristics of successful GED candidates in the two provinces are quite similar. It was not possible to make complete comparisons of data in the two provinces as the Manitoba surveys were conducted on successful GED candidates only and as Manitoba does not award equivalency diplomas through an alternate program as does Alberta. Table 22 summarizes the age distribution, sex, and highest-grade-completed by successful GED candidates in the two provinces. An examination of the table shows that there are few differences between the two samples concerning the distributions of the sex and highest-grade-completed variables. In the Alberta sample,

Table 22

A Comparison of Characteristics of Successful GED Candidates for the Manitoba and Alberta Equivalency Programs

Characteristics	Percentage of Respondents	
	Manitoba (n = 803)	Alberta (n = 113)
Sex		
Male	48	47
Female	52	53
Age		
19 - 25	33	29
26 - 30	20	25
31 - 40	28	35
41 - 50	14	18
51 and older	5	6
Highest Grade Completed		
less than grade 9	11.4	6.2
grade 9	19.2	24.8
grade 10	33.3	33.6
grade 11	32.0	29.2
grade 12	4.1	6.2

however, successful GED candidates were found to be older than those in Manitoba. The modal age category of successful GED candidates in Manitoba was 19 to 25 years while in Alberta it was 31 to 40 years.

Both the present study and the Manitoba surveys provided information concerning GED candidate awareness of and preparation for the GED Test Program. Successful GED candidates in both provinces most frequently became aware of the GED tests through a friend or relative. Fifty percent of the respondents in Alberta and 46% of the respondents in Manitoba said that they learned of the GED tests in this manner. Approximately half of the survey respondents in both provinces were found to have studied for the GED tests.

Expectations of program benefits were also found to be similar for the respondents of the Manitoba and Alberta surveys. Improved job opportunities was cited by 45% of the Manitoba sample and 43.4% of the Alberta sample as an expected benefit of participation in the respective equivalency programs. Personal satisfaction and improved educational opportunities, respectively, were the second and third most frequently mentioned expectations by both samples.

In the Manitoba sample (1982), 48% of those who indicated a desire to broaden their educational opportunities had been accepted into educational institutions. For the Alberta sample, 30.2% of the respondents whose desire it was to be accepted by an educational institution reported that they had been accepted as either full- or part-time students.

The Manitoba (1982) survey directly asked respondents whether they felt that their self-confidence had increased as a result of writing the GED tests and acquiring a high school equivalency certificate. Under these circumstances, 66% of the Manitoba sample agreed that their self-confidence had indeed improved. Using an indirect approach, approximately 18% of the Alberta sample stated that they were more self-confident after successfully writing the GED tests.

Results of questions related to the employment status of respondents in the two samples were not compared as regional differences and the different times that the data were gathered were considered to be confounding variables. For similar reasons, changes in income for the two samples were not compared.

Several trends were found in the Manitoba surveys for the 1973 to 1980 time period. These trends were considered important in light of the present study even though there exist no comparable Alberta data. The sexual composition of the Manitoba GED population has gradually changed from 75% male and 25% female to 48% male and 52% female, thus making the GED population more representative of the sexual composition of the population as a whole. Over time the percentage of GED graduates using the equivalency certificate as information in support of job applications increased from 33% in 1973 to 52% in 1980. Also, more GED graduates in 1980 than in any other year saw the equivalency certificate as improving their employment chances. In general, GED graduates most often stayed in the same job after completing the equivalency program in Manitoba.

C. Program Utility Assessment

In the sections that follow, the results of inquiries into the acceptance of the Alberta High School Equivalency Program on the part of Alberta's post-secondary institutions and employers are reported and discussed. Following the discussion of the acceptance of the AHSEP, comparisons of the utility of the Manitoba and Alberta equivalency programs are presented.

1. Program Acceptance by Alberta's Post-secondary Institutions

Registrars of 19 Alberta post-secondary institutions were either surveyed by mail or interviewed over the telephone concerning the acceptance of the AHSEP. The results of these program utility assessment activities are presented below.

1.1 Adult Admissions Policies

1.1.1 Universities

Three of the four Alberta universities were found to have similar policies regarding the admission of adult students. The universities of Alberta, Calgary, and Lethbridge require non-matriculated adults to meet specific age and academic course requirements before granting admission. Only Athabasca University's open admissions policy allows for the admission of individuals to credit programs regardless of their academic backgrounds. Policy statements related to adult admissions found in the academic calendars of the institutions in question were reviewed to corroborate and supplement the information provided by the registrars. Information concerning the adult admissions policies of Alberta's universities is found in Table 23.

Registrars at the four universities were also asked about policies pertaining to the admission of adults who have an Alberta High School

Table 23

Post-secondary Institutions - Adult Admissions Policies

Policy by Type of Institution	Frequency
Universities	
Open-admission Applicants must be at least 18 years of age.	1 (Athabasca University)
Admit non-matriculated adults Applicants must be 21 years of age and residents of Alberta or the Territories. Admission considered for most programs other than pre-professional programs	1 (University of Alberta)
Admit non-matriculated adults Applicants must be 21 years of age, residents of Alberta, and have English 30.	1 (University of Calgary)
Admit adult students Applicants must be 19 years of age and provide evidence that they can benefit from university level studies.	1 (University of Lethbridge)
Community/Public/Private Colleges	
Open-admission	
Applicants must be 18 years of age. Admission considered for most programs	3 (Mount Royal College) (Keyano College) (Medicine Hat College)
Applicants must be 19 years of age. Admission considered for most programs	1 (Lethbridge College)
Applicants must be 21 years of age. Admission considered for all programs	1 (Olds College)
Open-admission with qualifications	
Applicants must be 18 years of age and out of school for a year. Admission considered for most programs	3 (Grant MacEwan College) (Lakeland College) (Fairview College)
Applicants must be 18 years of age, out of school for six months, and meet all program requirements except the diploma requirement.	1 (Olds College)

Table 23 (cont')

Policy by Type of Institution	Frequency
Admit non-matriculated adults Applicants must be 21 years of age and residents of Alberta or the Territories. Admission considered for most programs other than pre-professional programs	2 (Concordia College) (Camrose College)
Technical Institutes	
Open admission Applicants can be any age but must have been out of high school for at least one year. Admission is considered on an individual basis	1 (Westerra IT)
Open admission with qualifications Applicants must be 18 years of age, have a 50% standing in an English course acceptable to the program they wish to enter, and 50% in any specific course listed as a prerequisite.	2 (Northern Alberta Institute of Technology) (Southern Alberta Institute of Technology)

Equivalency Diploma. Universities, in general, do not accept the equivalency diploma for purposes of admission. At the same time, however, they do not accept a high school diploma as sufficient for admission either. What is of interest to the universities of Alberta, Calgary, and Lethbridge is that the applicant possess an acceptable standing in specific grade 12 academic courses. Equivalency diploma holders may qualify for admission under the provisions of the non-matriculated adult policies outlined above. Athabasca University, with its policy of open admissions, does not make a distinction between the equivalency and regular high school diploma. Having a diploma is not an issue with Athabasca. Information concerning the admissions policies of Alberta's universities related to the AHSEP are provided in Table 24.

1.1.2 Colleges

The adult admissions policies of the colleges were found to be quite diverse. While the majority of the colleges favor an open admissions policy of one sort or another (see Table 23 for details), the two private colleges surveyed, Camrose Lutheran College and Concordia College, have policies which are very similar to that of the University of Alberta. This fact is probably a result of the affiliation agreements that the two colleges have with the University of Alberta.

In terms of the acceptance of the equivalency diploma, seven colleges reported that the equivalency diploma is accepted as equivalent to a regular high school diploma for purposes of admission to some of the programs they offer. Five colleges do not have a policy concerning the acceptance of the equivalency diploma.

Table 24

Post-secondary Institutions - Admissions Policies Related to the AHSEP

Policy by Type of Institution	Frequency
Universities	
Open admissions policy allows for admission of equivalency students.	1 (Athabasca University)
The equivalency diploma does not give the student a matriculation standing. Admissions policies for non-matriculated adults are used in such cases.	3 (University of Alberta) (University of Calgary) (University of Lethbridge)
Community/Public/Private Colleges	
For programs requiring only a high school diploma an equivalency diploma is accepted but not if specific courses are a part of of the admission requirements.	7 (Red Deer College) (Keyano College) (Olds College) (Lethbridge College) (Medicine Hat College) (Lakeland College) (Fairview College)
No policy concerning the acceptance of individuals with equivalency diplomas.	5 (Grande Prairie College) (Mount Royal College) (Grant MacEwan College) (Camrose College) (Concordia College)
Technical Institutes	
Accept the GED as equivalent to specific Alberta high school courses.	1 (Northern Alberta Institute of Technology)
Each case is evaluated on an individual basis with individuals undergoing testing related to the program they wish to enter.	1 (Southern Alberta Institute of Technology)
The equivalency diploma is acceptable for admission to technology programs.	1 (Westerra Institute of Technology)

1.1.3 Technical institutes

Alberta's three technical institutes appear to favor open admissions policies for adult students. Westerra Institute of Technology is the most liberal of the three. Westerra has no age restriction in terms of entrance into its programs. Both the Northern Alberta Institute of Technology (NAIT) and the Southern Alberta Institute of Technology (SAIT) qualify their acceptance of adults by requiring them to meet specific course requirements (see Table 23).

Concerning the acceptance of the equivalency program, it was found that one technical institute has established a policy with respect to the GED tests. NAIT has equated successful completion of the GED with a standing of 40% in grade 12 English and Social Studies and 40% in Math 23 (a non-academic grade 11 mathematics course) and a 20 level (grade 11) science. No rationale for this policy was provided. Specific details regarding the admissions policies for equivalency program graduates used by the three technical institutes are provided in Table 24.

1.2 Other Findings

The importance of the regular high school diploma in terms of admission to post-secondary education in Alberta was also assessed. Fifteen of the 19 institutions surveyed reported that additional qualifications beyond a high school diploma are generally required before an individual is admitted to a program. The diploma constitutes one of a number of criteria that are considered in making admissions decisions.

Public and community colleges and technical institutes were found to use the high school diploma as one of the criteria in their admission processes. In general, these institutions were found to accept both the equivalency diploma and the regular high school diploma. Nine out of 13 institutions make no distinction between the two credentials. This finding is similar to those reported by the Manitoba Department of Education (1981a) in a recent study and by the Province of Saskatchewan (1977) in its initial survey of equivalency program acceptance by Saskatchewan's post-secondary institutions.

The number of individuals with equivalency diplomas who have been accepted into programs at post-secondary institutions was difficult to determine due to the manner in which most institutions maintain admissions records. Applicants are not generally classified according to the type of diploma they possess. As a result, only five institutions were able to provide estimates of the number of equivalency program graduates who had been accepted into post-secondary programs. These institutions were the three technical institutes (NAIT, SAIT, and Westerra), Red Deer College, and Lakeland College. The registrar for SAIT reported that 25 equivalency diploma graduates had been accepted into programs at the institution and that having an equivalency diploma was an important factor in the admission of these individuals. Twenty equivalency program graduates were admitted to programs at NAIT. In three of these cases the equivalency diploma made a difference. One person with an equivalency diploma has been accepted by Westerra. The diploma also made a difference in this case. The Lakeland College registrar estimated that six equivalency diploma graduates had been accepted at the college and that the equivalency diploma had helped in getting these individuals accepted into the college. A total of 10 people with equivalency diplomas were reported as being accepted by Red

Deer College but their admission did not having anything to do with the fact that they possessed an equivalency diploma.

1.3 Comments Made by Registrars

The comments made by registrars of the post-secondary institutions were reviewed and common themes extracted. A summary of these comments is given in Table 25. The most frequent comment offered referred to the variety of grading systems employed by Alberta high schools and how this situation has resulted in the devaluation of the high school credential for admission purposes. For example, one of the registrars commented that

> [a] high school diploma in the past few years has meant nothing due to the variety of courses and variations in the grading system. I expect better things to come.

Many of the registrars defended their lack of acceptance of the equivalency credential by saying that not enough is known about the GED and how GED graduates perform in post-secondary settings. While this is certainly true for Alberta, the predictive validity evidence provided by J. D. Ayers (1980), Colert (1983), Wolf (1980), and Wilson, Davis, and Davis (1981) seems to indicate that the current forms of the GED tests have some value as predictors of success in a wide range of post-secondary educational settings.

Registrars seemed intent on trying to equate the GED sub-tests to specific Alberta high school courses rather than compare the performance of GED candidates with the performance of the norming sample of Alberta high school seniors on the GED tests. For example, the registrar of one of the colleges commented that

> I...doubt that there is a high correlation between the GED subjects and a grade 11 or 12, 30 level subject.

Table 25

Summary of Comments from Post-secondary Institutions

Comment	Frequency
1. The GED may or may not be related to current regular high school courses.	2
2. The high school credential is a fairly good indicator of success in our programs.	2
3. Maturity is a better yardstick to use than the high school diploma when it comes to success in college.	1
4. The high school diploma has become meaningless due to the variety of grading systems.	4
5. The high school diploma is not a good predictor of success.	2
6. Educational institutions need to agree on a set of qualifications and establish uniform admissions policies.	1
7. The diploma is valuable as a screening device.	1
8. The high school diploma is indicative of a standard of achievement and an ability to cope with academic material.	1

This comment represents the same kind of confusion over what is meant by the term 'equivalency' that was apparent from discussions with Alberta Education officials.

1.4 Program Comparison

Manitoba seems to have achieved mixed success in gaining acceptance of its equivalency diploma by post-secondary institutions. One Manitoba university, Brandon University, does accept individuals with GED credentials, (interview, former Manitoba GED administrator, July 26, 1984). In contrast, no Alberta university recognized the equivalence of the diploma. Throughout the course of the study Alberta Education and Alberta Advanced Education officials alluded to acceptance of the equivalency credential by post-secondary institutions as a problem. It appears that their concerns are well-founded.

1.5 Summary and Comments

Many of the registrars surveyed were of the opinion that their current adult admission policies were sufficient to meet the needs of equivalency program graduates. This attitude presents a problem for equivalency program graduates who, according to the registrars surveyed, are often lumped together with non-high school graduates in terms of admission to post-secondary programs and as a result receive the same low status as non-high school graduates. This admission situation is similar to the one reported by Laurence (1983) in her study of GED acceptance by the United States military. Furthermore, it is not possible, based on the findings, to report the same high levels of acceptance of the equivalency credential that are reported by either Sharon (1971) or the American Council on Education (1982a) in the United States. Some doubt must be cast on the utility of the equivalency diploma in assisting individuals to gain acceptance to post-secondary education in Alberta at the present time. In fairness, however, it must be said that the equivalency program has a much shorter history in Alberta than elsewhere in North America and many of Alberta's post-secondary institutions have not had experience with program graduates.

It became apparent early in this part of the investigation that the possession of any type of general high school credential on the part of an applicant is less an issue for Alberta's post-secondary institutions than is the possession of specific courses or other criteria. This finding is particularly interesting because one of the expectations of college counsellors prior to the inception of the AHSEP was that the possession of an equivalency diploma would provide greater access to post-secondary education for individuals who previously did not have a high school diploma.

2. Program Acceptance by Alberta's Employers

2.1 Findings and Discussion

Two groups of Alberta employers from the Edmonton area were interviewed to assess the extent to which employers regard the equivalency diploma as equivalent to a regular high school diploma for purposes of hiring or promoting staff. One group consisted of three employers who were known to accept the equivalency diploma while the other group was a stratified random sample of nine employers who were known to employ large numbers of individuals. The latter group was selected with the help of the Alberta Bureau of Statistics and consisted of employers who represented the manufacturing, construction, transportation, retail trade, finance, and personal service industries, and public administration organizations. The employers in the two groups represented over 60,000 Alberta workers. Employers in each group were interviewed using the same interview schedule (see Appendix H). A review of responses to questions on the interview schedule revealed no differences between the group of employers known to accept the equivalency diploma and the stratified group of employers in terms of educational criteria included in their hiring policies. The results of the employer interviews were pooled as a consequence of this finding and further analysis was conducted using a single group of 12 employers. To achieve greater levels of co-operation, employers were assured that their firms would remain anonymous.

The employer sample was generally unfamiliar with the Alberta High School Equivalency Program. Asked if they had heard about the AHSEP, 6 out of 12 interviewees replied that they had. Only four of those that had heard about the program knew what it is about or for whom the program is intended.

This lack of familiarity with the program resulted in a reluctance on the part of five of the employers to accept the equivalency credential as equivalent to a regular high school diploma. Most of the employers who demonstrated an initial distrust of the equivalency program were willing to accept the equivalency credential after receiving an explanation of the program or after reading the program's descriptive brochure provided by the author. In general, then, it was found that employers would accept either the Alberta High School Equivalency Diploma or a regular high school diploma for jobs requiring a high school diploma. Nine out of the 12 interviewees took this approach to the acceptance of high school credentials.

While the results of the employer survey conducted as a part of the present study must be interpreted cautiously, it should be stated that the results do tend to confirm the levels of employer acceptance reported by the authors of surveys in Manitoba (Manitoba Department of Education, 1981a) and in Saskatchewan (Province of Saskatchewan, 1977, 1981). Unlike the findings reported by Wedel (1974) for the Saskatchewan equivalency program, large national corporations were not found to be reluctant to accept equivalency credentials. What was necessary to secure acceptance of the equivalency credential was to provide these employers with an adequate description of the equivalency program.

Most of the personnel officers reported that the acquisition of an equivalency diploma (or regular diploma for that matter) would not result in an employee receiving a raise (11 out of 12) or a promotion (9 out of 12). These findings run counter to the information provided by Malizio and Whitney (1984) in their survey of American companies. The vast majority of American employers surveyed by these authors felt that promotion opportunities for individuals who acquired an equivalency diploma would be enhanced. Also, while five of the interviewees claimed to be aware of employees who have earned an equivalency diploma, none could say for certain how many had been hired. It was not, therefore, possible to confirm the findings of Cervero and Peterson (1982) which suggested that the equivalency credential is of questionable value in assisting individuals to gain new employment.

The hiring policies of the sample of employers were found to be quite divergent but one major theme emerged. For the majority of the 60,000 jobs for which these employers may potentially hire individuals, educational qualifications represent only one of several other, more important criteria. This attitude toward high school credentials is similar to that expressed by registrars of Alberta's post-secondary institutions concerning the admission of adult students. To some extent the lack of concern over whether an individual holds a regular high school diploma or an equivalency diploma represents tacit acceptance of the equivalency diploma as equivalent to the regular high school diploma. It may be suggested that both credentials are equally unimportant in the eyes of employers and post-secondary institutions. Table 26, which summarizes the comments related to the hiring policies of the employer sample, illustrates the relative importance that employers place on educational credentials. The comments listed in the table represent, in many cases, the single most important factor used by each of the employers in this sample when hiring individuals for their organizations.

It is important to remember that one of the primary reasons for the existence of the equivalency program, as stated by Alberta Education and Advanced Education officials and AVC staff, is to help adults to meet their employment needs. The results of the survey of employers indicate that the equivalency program is not directly responsible for enhancing job prospects. Employers are less concerned about educational credentials in general than they are about other factors that are more directly relevant to the jobs they have to offer. The findings of this part of the study raise doubts concerning the value of the high school credential in the job marketplace.

2.2 Program Comparison

Results from a Manitoba survey of employers (Manitoba Department of

Table 26

Summary of Comments Related to Hiring Policies - Employer Sample

Hiring Policy	Frequency
1. Educational qualifications are not an important factor in hiring.	2
2. Screen applicants through the use of tests developed specifically for the company	3
3. Experience is as important as educational qualifications.	2
4. Hiring policy is dependent upon the number and kind of positions available	1
5. Use a point system in which education is but one of a large number of criteria for selection	2
6. Look for specific courses rather than a specific credential	1
7. Look at personal qualities of the individual (leadership ability, communication skills, interpersonal skills, initiative) more than educational qualifications	1

Education, 1981a) and the interviews of employers from the present study produced similar results, although it is difficult to compare the two studies due to the divergent approaches taken. In Manitoba, every employer who engaged 15 or more employees was surveyed, while in the present study, a small sample of large employers was taken. Sixty-five percent of the Manitoba employers and three-quarters of the Alberta employers indicated that high school equivalency diplomas are acceptable for employment for jobs that require a minimum of a high school diploma. Additional qualifications and skills beyond a high school diploma were mentioned by 20% of the Manitoba employers and 25% of the Alberta employers as necessary before an applicant would be considered for a job.

The Manitoba employers appeared to be more familiar with the Manitoba equivalency program than Alberta employers were with the Alberta equivalency program. Only 13% of the Manitoba employers indicated that they were unfamiliar with the equivalency program while 8 out of the 12 Alberta employers did not know what the Alberta equivalency program was about.

CHAPTER V: CONCLUSIONS AND RECOMMENDATIONS

This chapter consists of two components: a summary of conclusions regarding the effectiveness of the Alberta High School Equivalency Program and a list of recommendations for program changes and future study. The discussion that follows is presented within the context of the program evaluation approach that served as the organizational framework for the study, namely that of Rossi and Freeman (1982).

A. Program Conceptualization and Design

1. Program History

The study of the historical events leading to the formulation of the Alberta High School Equivalency Program demonstrated that a problem exists in terms of the philosophical basis of the equivalency program. The policy debate which occurred during the 1970's between Alberta Advanced Education and Manpower and Alberta Education was not centred on concerns over the needs of a particular group of people but rather dealt with inter-departmental responsibilities concerning program implementation. It was interesting to find that little attention was devoted to questioning whether there was an identifiable group of individuals who were in need of a program such as the AHSEP. As a result no needs assessment for the program was conducted by either department. The program as it operates appears to be largely the result of a lobbying effort on the part of staff from vocational centres who, in their work, encountered individuals who expressed a desire to have a high school diploma.

The historical information available concerning equivalency program discussions and policy debates also clearly demonstrated the process of accomodation that often takes place when policy decisions are made.

Cronbach and associates (1980, p.114) have defined this process in the following terms:

> The settlement or accommodation reached in a round of political bargaining is what participants are willing to settle for. The action may not match any player's ideal, but it is within the acceptable range. The equilibrium is unstable, because the settlement is "right" only in a political sense. A limited shift in beliefs or political alliances, or perhaps a newly devised proposal for action, will make reopening the discussion worthwhile.

Advanced Education and Manpower took the position that what they wanted at the very least was the adoption, by Alberta Education, of the GED tests for use in Alberta. Advanced Education and Manpower presented Alberta Education with two options -- either develop a set of Alberta high school equivalency examinations or approve the GED tests for use in Alberta. Advanced Education and Manpower was willing to settle for the GED tests but would have liked to have seen Alberta tests developed. The decision to establish norms for grade 12 equivalency but not for grade 10 and 11 equivalency and other decisions concerning eligibility criteria for the program also demonstrated the same process of political negotiation or accomodation. It is unfortunate that the debate was restricted to these issues and the more important issues of program purpose and target population seem to have been ignored. A debate within the context of a well-defined need may have resulted in a greater measure of coherence and direction for the program.

Another issue which surfaced as a result of the inquiries into the historical background of the AHSEP concerned the meaning of the term 'equivalency.' Of concern here was whether it is the experiences and educational development of high school graduates and equivalency program graduates that should be regarded as equivalent or the credentials they receive. From a participant's equity perspective, the true test of the AHSEP is whether the equivalency diploma provides its holders with educational and vocational opportunities that are the same as those afforded to regular high school graduates. Having said this, it must be recognized that the current high school diploma may not entitle the holder to many employment and educational opportunities either. The resolution of the problem of what is meant by the term 'equivalency' may lie in the removal of the term from use in connection with the program. That the term 'equivalency' is a misnomer has also been expressed by C. V. Ayers (1980). In light of these objections to the use of the term 'equivalency' it may have been more appropriate to call the program the 'Alberta Adult High School Diploma Program'.

2. Program Goals and Objectives

The implicit goals, objectives, and rationale identified through interviews with government officials seem to be based on assumptions concerning the value of a high school credential which may not be valid. The historical evidence provided no indication that the assumptions inherent in the program rationale were questioned or debated by the government officials involved. While there is no doubt that the goals, objectives, and rationale of the AHSEP are similar to those of other equivalency programs (American Council on Education, 1981; Manitoba Department of Education, 1981b; Province of Saskatchewan, 1981), it would be useful for program administrators to consider again why they are offering the AHSEP.

The lack of clearly stated goals and objectives and a well-defined rationale for the program that was consistently acknowledged by program staff may have been a result of the inattention to the philosophical underpinnings of the AHSEP cited above. Attempts to judge the effectiveness of the program were hampered by the lack of program definition. The best that could be done under such circumstances was to determine what most individuals associated with the program believe are the goals, objectives, and rationale and to design studies to assess the extent to which the program could be considered effective in each of these areas. This approach was taken in the present study to answer questions related to the utility of the program.

Inquiries into the goals, objectives, and rationale of the equivalency program also demonstrated that officials, particularly those from Alberta Education, have been slow to recognize the AHSEP as related to adult education rather than secondary education. While on the surface it would not be unreasonable to base high school equivalency tests on present Alberta secondary school curricula, such a move could be seen as an attempt to change the focus of the assessment of equivalency from its current norm-referenced approach to a criterion-referenced approach. Comparisons that would be made under a criterion-referenced testing scheme would focus on the performance of adults on secondary education program goals. It would appear, from the perspective of adult educators, that a more desireable situation would see the development of a set of tests that take into consideration the goals and objectives of an adult education program and not a secondary education program. Secondary education tends to emphasize achievement of subject-specific curricular goals while the goals of adult education primarily focus on the social and psychological needs of adult learners.

The Alberta High School Equivalency Program suffers from a lack of philisophical definition. Program administrators will have to address the concerns outlined above before an adequate set of program goals and objectives and an appropriate statement of rationale can be developed.

B. Program Monitoring

1. Assessment of Equivalency

The two components of the Alberta High School Equivalency Program, the GED tests and the alternate route, were studied to determine whether these approaches to the measurement of high school equivalency were appropriate given the goals, objectives, and rationale of the program. To be useful to program applicants in terms of their desire to seek further educational opportunities, the GED tests must be considered valid and reliable measures of high school equivalency. The GED tests were certainly found to be as reliable as they have been purported to be by the testing agency responsible for their construction (Educational Testing Service, 1980). The tests were also found to be useful in determining the strengths and weaknesses of GED candidates.

Questions remain concerning the use of the tests as a way of discriminating between adults whose GED test scores are equivalent to those of high school graduates and adults whose GED test scores are not equivalent to those of high school graduates. The validity of the GED tests as instruments that can discriminate between adults who should receive equivalency credentials and those who should not is debatable.

Evidence in the literature suggests that the tests have some use in predicting academic success in post-secondary education (J. D. Ayers, 1980; Colert, 1983; Wolf, 1980), but their applicability in the Alberta context is not known. To extend the generalization, it will be necessary to conduct predictive validity studies using Alberta equivalency program graduates within the Alberta post-secondary context.

Such studies would serve to provide answers to many of the questions raised by registrars and would also serve to publicize the program.

While the evidence presented in Chapter IV suggests that the GED tests are useful for assessing high school equivalency, the alternate route suffers from a number of problems. Even though program graduates who have gone through the alternate route may be more academically capable than GED graduates, the perceptions of employers and of the public are that these individuals have received some 'free' high school credits. These perceptions have severely limited the acceptance of this part of the program.

2. Characteristics and Perceptions of Program Applicants

Given that the goals and objectives for the Alberta High School Equivalency Program were not found to be different from those of other equivalency programs, it was not surprising that the characteristics of the Alberta equivalency population and other equivalency populations described in the literature were found to be similar. Perhaps the only area in which the present study differed greatly from other studies was in terms of the age composition of the sample and the relationship of this variable to GED test scores. The reasons given for applying to the equivalency program, prior expectations, and benefits reported by the sample of AHSEP participants were not unlike those of other equivalency programs.

As in similar programs, there was a tendency to inflate the value of the equivalency diploma in terms of its utility in the educational and job marketplaces. Many program participants saw the equivalency credential as a way of overcoming all barriers that existed for them in their attempts to find employment or acceptance to post-secondary education. Perhaps this is why discrepancies in terms of prior expectations and post-program benefits similar to those reported by Cervero and Peterson (1982) were found.

From the perspective of program participants, the primary benefits to be derived, as indicated in the previous chapter and as alluded to in studies of other equivalency programs (Cervero & Peterson, 1982; Fischer & Evanson, 1979; Harris et al., 1983; Waller, 1976), appeared to be personal satisfaction and increased self-esteem. The value of these benefits should not be underestimated in terms of their importance in helping individuals to meet other goals of an educational or vocational nature. These psychological benefits may have assisted some of the program participants in finding a new job or may have provided the impetus for others to apply to a post-secondary institution. It may be that the credential itself is less important than the positive outlook created by the success in acquiring it.

In summary, where data were available, the general impression gained is that the characteristics and perceptions of the Alberta equivalency population are very similar to those of equivalency populations found in other parts of North America.

C. Program Utility Assessment

1. Program Acceptance by Alberta's Post-secondary Institutions and Employers

From an external perspective, what impact has the Alberta High School Equivalency Program had on those who have participated in it? Evidence from Alberta's post-secondary institutions and a sample of Alberta employers suggests that the program has been of benefit to a small number who have participated in it but that the magnitude of the benefit is difficult to ascertain. While the level of acceptance for the AHSEP is comparable to that found in other provinces (Manitoba Department of Education, 1981a, 1982; Province of Saskatchewan, 1977), it was not possible to corroborate this finding with the data from program participants who, as was reported earlier, tended to overestimate the value of the equivalency diploma for employment and educational purposes. In this regard, program sponsors have perhaps been guilty of inadequately communicating to the participants that, while the equivalency diploma may help, it is certainly not the only criterion that employers or post-secondary institutions consider. The role that other applicant characteristics play in acceptance into the educational and job markets cannot be ignored.

There is some indication, however, that more program participants may benefit in the future as a number of post-secondary institutions seem to be interested in establishing policies concerning the equivalency program. In particular, Alberta's technical institutes are accepting equivalency program graduates into some of their programs. The fact that possessing an equivalency diploma seems to have made a difference in a number of admission decisions for individuals applying to these institutions represents a breakthrough for equivalency program graduates. Also, given the opportunity to discover what the equivalency program was about, employers appeared interested in finding out more about the people who participate in the program. This desire may assist future program graduates in meeting their vocational goals.

D. Summary

From the outset, the primary purposes of this study have been to illuminate and to educate. The data and discussion presented in this thesis should provide program sponsors with sufficient descriptive information regarding a wide range of equivalency program topics to be useful in future program planning and decision-making efforts.

The public relations impact of the present study is difficult to assess but may represent a significant contribution to the future acceptance of the AHSEP. Throughout the course of the study, the value of surveying program stakeholder groups for purposes of increasing awareness of the equivalency program became apparent. Alberta Education may wish to continue this type of program 'advertising' by undertaking annual surveys of its equivalency population and by conducting surveys of employers and post-secondary institutions on a regular basis.

In the final analysis what can be said about the value of the Alberta High School Equivalency Program? Is it a worthwhile program? Based on the evidence collected, it is apparent that the AHSEP is seen as valuable in the eyes of those who have participated in it. This is not true so much because of any gains that individuals have made in terms of their educational and employment situations, although these gains have certainly been made by some, but rather in terms of the feelings of self-worth that acquiring an equivalency diploma engenders. The following comment offered by a 35 year old female graduate of the program (similar to many of those received) perhaps best sums up the value that a majority of equivalency program participants place on the program.

> The equivalency program has made me feel better about myself. It has also showed my children and others how important it is to have an education. It is something that I have always wanted to do. I think these tests are terrific for people like me.

The findings of this study, while not definitive, raise a number of questions concerning the value of the equivalency diploma in enhancing the further educational and job opportunities of its holders. While the present study has not considered program costs, program sponsors will have to consider these against the rather modest benefits that are reported in this thesis and decide whether the program merits continued support.

If the AHSEP continues, several program areas need to be reviewed by Alberta Education and Alberta Advanced Education officials. A number of other program areas require further study. In the next section of this chapter recommendations for changes and for future study are outlined.

E. Recommendations

The recommendations that follow are made to the departments of Alberta Education and Alberta Advanced Education and represent perceptions of changes that, based on the data of the present study, should be made to the Alberta High School Equivalency Program. Recommendations for further study are made to assist officials responsible for the AHSEP in making decisions regarding future research efforts related to the equivalency program.

1. Recommendations for Program Changes

Recommendation 1

A clear set of goals and objectives and a concise statement of rationale for the equivalency program must be prepared. Statements of goals and objectives, and a statement of rationale should be based on a philosophy for the program that has been agreed upon by officials of the two sponsoring departments of the equivalency program as well as various stakeholder groups (eg. post-secondary institutions, employers, and the public-at-large). In conjunction with discussions about program philosophy, the meaning of the term 'equivalency' must be clarified.

Recommendation 2

Alberta Education should develop a written test of writing skills for use in conjunction with the GED tests and the alternate route of the AHSEP. A writing test would enhance both the content and face validity of the equivalency program as currently the writing ability of all grade 12 Alberta high school students is tested.

Recommendation 3

The credits granted for extensive reading and travel through the alternate route of the AHSEP should be eliminated. The 10 credits available for these two areas should be included in the adult education course category. These credits lack credibility from the perspectives of various stakeholders.

Recommendation 4

The requirements for an equivalency diploma by the alternate route should reflect the course requirements for a regular high school diploma. This implies that Social Studies 10 should be a requirement for those applying to this route of the equivalency program.

Recommendation 5

In the future, greater efforts must be made to explain the Alberta High School Equivalency Program to potential program participants and Alberta employers. Alberta Advanced Education should become more actively involved in the administration and promotion of the equivalency program. Caution must be taken in promoting the program, however. Applicants must not be lead to believe that having an equivalency diploma will automatically lead to a job or result in their acceptance at a post-secondary institution.

Recommendation 6

Alberta's post-secondary institutions should be encouraged to adopt specific policy statements concerning the Alberta High School Equivalency Diploma. Such statements will clarify the status of equivalency diploma holders in terms of further educational opportunities.

A greater level of participation in the equivalency program on the part of Advanced Education is necessary if the above recommendations are to be implemented.

2. Recommendations for Future Study

Recommendation 7

Studies related to the value that the public and various interest groups place on high school credentials should be conducted.

Recommendation 8

Annual surveys of GED candidates should be conducted in order to monitor changes in the Alberta equivalency program population. As well, periodic surveys of employers and post-secondary institutions should be undertaken. Such surveys would be of assistance in monitoring, on an on-going basis, the extent to which the program is reaching its target population and meeting its goals and objectives.

Recommendation 9

The performance of the GED test forms used in Alberta should be assessed following each administration. Item and test statistics should be produced for all test administrations.

Recommendation 10

Predictive validity studies must be conducted for those Alberta equivalency program graduates who go on to post-secondary studies. The co-operation of Alberta's post-secondary institutions must be sought in order to implement this recommendation.

Recommendation 11

The GED tests used in Alberta must be re-normed on a regular basis. Consideration should be given to re-norming the tests within the next two or three years. Re-norming on a regular basis would serve to ensure that current GED candidates are being compared to recent high school graduates. In addition, changes in high school graduation standards need to be monitored on a continuing basis.

Recommendation 12

Differences among some of the sub-populations who take the GED tests (eg. natives and prisoners) should be investigated so that the needs of these special groups may be considered.

CHAPTER VI: REFLECTIONS

In an evaluation study, issues often arise that, while not of direct interest, impinge on the study at hand. In the case of the evaluation study of the Alberta High School Equivalency Program, two such issues arose. These issues are best summed up in the form two questions. First, why is the high school credential thought to have further educational and employment value? and, second, how useful is the Rossi and Freeman (1982) evaluation framework in the conduct of an evaluation study? The brief discussion that follows presents some reflections on these two tangential issues.

A. Belief in the Value of High School Credentials

Much of what was found in the evaluation of the AHSEP concerning the high school equivalency credential has implications for studies which address issues related to high school credentials in general. It became clear in terms of both the policy debate which took place prior to the inception of the AHSEP and in terms of the implicit set of goals and objectives on which the equivalency program appears to be based that uppermost in the minds of many government officals and adult educators was the notion that a high school credential has value in the educational and job marketplaces. The responses of equivalency program participants to many of the questionnaire items seemed to suggest that this group also places considerable value on the high school credential.

Where does the belief that high school credentials have an inherent value originate? It may be that some of the officials interviewed in this study are reflecting the beliefs of American educators such as Cross (1981) who have suggested that the value of a high school diploma in providing access to the job and educational marketplaces is unquestionable. Also, given that most of the literature on equivalency programs and adult education is American, it is reasonable to expect that Canadian equivalency program sponsors would adopt an approach similar to their American counterparts. Thus, the goals and objectives of the Alberta equivalency program (either rightly or wrongly) may have been modelled after conditions in the United States where traditionally a high school diploma seems to provide its holder with access to further educational opportunities.

For program participants, the diploma's value in the job marketplace may be a product of beliefs engendered by the hiring process itself. Job application forms almost always ask for the educational level completed by the applicant and individuals that are unsuccessful in obtaining a job may identify their lack of a high school diploma as a possible reason. As a result, they may begin to believe that the only way to gain employment is to acquire a high school diploma. Thus, the value that people place on a high school diploma may be a direct response to their life situations. For example, it is quite likely that "people who do not have good jobs are interested in further education to get better jobs" (Cross, 1981, p.91). This pragmatic belief system was evident in the present study on the part of many of the respondents to the questionnaire who indicated that acquiring an equivalency diploma offered hope for improved employment opportunities.

B. Thoughts on the Rossi and Freeman Evaluation Approach

In retrospect, what can be said about the Rossi and Freeman evaluation approach as it was used in the evaluation of the Alberta High School Equivalency Program? Prescriptive and rational are two adjectives that aptly describe this view of how an evaluation study should be conducted: prescriptive in terms of the types of questions that should be addressed and the methods that should be used to gather evaluation data; rational in the sense that the approach is a logical, reasoned way to go about evaluating a program.

The rational nature of the Rossi and Freeman approach encourages the evaluator to ask questions about the goals and objectives of a program and to judge the effectiveness of a program in terms of the ability of its participants and sponsors to achieve these goals and objectives. Effective programs are those that meet their objectives. Little consideration is given to the unintended outcomes that are the by-products of many programs. The evaluator using the Rossi and Freeman approach must be aware of this emphasis on goal attainment and decide whether to search for outcomes that are not goal-specific when conducting an evaluation. To adequately judge the worth of most programs, information related to unintended outcomes is essential. In these cases, it is necessary to go beyond the evaluation questions suggested by Rossi and Freeman.

The use of the Rossi and Freeman approach also pointed to the need in an evaluation study to consider the social worth of a program. This perspective was particularly useful for the utility assessment phase of the present study in that it enabled a unique view of issues surrounding high school equivalency to be considered.

The potential of evaluation data to shape policy decisions is another of the emphases of the Rossi and Freeman approach. Program evaluations are often political and managerial activities. The extent to which evaluation data are capable of convincing program sponsors of the policy significance of the findings is largely determined by the political context within which the program operates. In some instances overwhelming evidence is required before policy change will occur while in other instances modest evidence is all that is required to move policy-makers. The decision to change policy to improve a program rests on the value that sponsors place on the program. The results and conclusions presented in this thesis should challenge government officials to consider policy changes that are directed toward the improvement the Alberta High School Equivalency Program.

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APPENDIX A

AN ALTERNATIVE TO THE GED TEST PROGRAM

An Alternative to the GED Test Program

As an alternative to writing the GED tests, a person who does not have sufficient credits for a high school diploma and who has been out of school for at least one school year may obtain an Alberta High School Equivalency Diploma by applying directly to the Student Evaluation Branch, Alberta Education. All applicants must send supporting documents outlining their educational standing with the application.

Under this alternate program, a candidate may obtain an Alberta High School Equivalency Diploma by presenting 100 high school credits gained as follows:

1. A minimum of 60 credits gained through classroom instruction in a school or other institution authorized by Alberta Education to grant credits in recognized senior high school courses or gained through study of high school courses offered by the Alberta Correspondence School. These 60 credits must be made up as follows:

(a) a high school course in mathematics	5 credits
(b) a high school course in science	3 credits
(c) English 30 or English 33	5 credits
(d) one other Grade 12 course	5 credits
(e) additional high school courses	42 credits

2. An additional 40 credits that may be awarded as follows:

   (a) additional high school courses
   (b) a maximum of 15 credits for maturity according to the following scale:

Age 21-24 (inclusive)	5 credits
Age 25-29 (inclusive)	10 credits
Age 30 and over	15 credits

   (c) up to 15 credits for approved adult education courses under recognized agencies (eg. public colleges, institutes of technology, extension divisions of universities, adult evening classes)
   (d) up to 5 credits for extensive travel
   (e) up to 5 credits for extensive reading or for private study

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APPENDIX B

INTERVIEW QUESTIONS: ALBERTA EDUCATION AND ALBERTA ADVANCED EDUCATION OFFICIALS

Questions Addressed to Government Officials

1. Briefly outline the discussions that took place prior to the decision to use the GED tests in Alberta.
2. Who were the main supporters/opponents of the use of GED tests in Alberta? What was the basis of their support/opposition?
3. Why was Advanced Education involved in the assessment of high school equivalency?
4. What role did AVC staff play in the adoption of the GED tests?
5. What are the current responsibilities of Advanced Education with respect to the AHSEP?
6. From your perspective, what are the goals and objectives of the AHSEP? Why does the program exist?
7. Describe the role and responsibilities of Alberta Education in the AHSEP.
8. Outline any positive or negative features of the program that have been raised over the past two or three years.
9. What do you consider to be the value of the equivalency diploma in today's society?
10. How has the program changed since its inception?

Questions Addressed to the Administrator of the Alternate Route

1. Describe the procedures and policies that you follow in evaluating applicants to the alternate route of the AHSEP.
2. How are adult education credits evaluated?
3. On what basis are credits for travel and extensive reading and private study awarded?
4. In terms of academic ability, how do the equivalency diploma holders that have gone through the alternate route compare with GED graduates?
5. From your perspective, what are the goals and objectives of the AHSEP?

APPENDIX C

QUESTIONNAIRE - FORM A

ALBERTA HIGH SCHOOL EQUIVALENCY PROGRAM STUDY

QUESTIONNAIRE

Directions

Most of the questions in this survey provide you with a number of possible choices. Please answer these questions by marking an (x) in the circle provided next to the answer you think is most appropriate.

Example

Have you written the GED tests?

☒ YES
○ NO

For other questions you will be asked to write your answers. Please write neatly in the spaces provided.

Begin with question 1 and read through the questionnaire until you reach the end. You may not have to answer all of the questions, however. Be sure to follow the directions that are given throughout the questionnaire. These directions will lead you to questions that are appropriate for you to answer based on your previous responses.

Section I: You and the GED

1. What did you think of the General Educational Development (GED) tests? **(MARK AS MANY AS APPLY)**

I thought the tests were:

○ too easy
○ too hard
○ about the right level of difficulty
○ a fair indication of my knowlege and skills
○ other **(PLEASE EXPLAIN)**

____

2. How did you hear about the GED Testing Program? **(MARK AS MANY AS APPLY)**

○ through a friend or relative
○ through my employer
○ from an employment counsellor
○ from an employee of an Alberta Vocational Centre
○ from another source **(PLEASE EXPLAIN)**

____

3. Why did you write the GED tests? **(MARK AS MANY AS APPLY)**

○ to improve my educational opportunities
○ to improve my chances of being promoted in my job
○ to improve my chances of getting a better job
○ to see if I could do well enough to obtain a high school diploma
○ for personal reasons **(PLEASE EXPLAIN)**

____

4. Who encouraged you to apply to write the GED tests? **(MARK AS MANY AS APPLY)**

○ my employer
○ my spouse
○ an employment counsellor
○ a friend or relative
○ no one encouraged me to apply
○ other **(PLEASE EXPLAIN)**

____

5. BEFORE writing the GED tests, how did you expect that a high school equivalency diploma would help you? **(MARK AS MANY AS APPLY)**

I expected the equivalency diploma would:

○ improve my chances for getting a job
○ improve my chances for getting a promotion
○ help me to keep my present job
○ help me to get a raise
○ make no difference to my job
○ help me to be admitted to an on-the-job training or apprenticeship program
○ help me to be admitted to an educational institution
○ make no difference to my educational opportunities
○ not help me in any way
○ help me in a personal way **(PLEASE EXPLAIN)**

____

6. SINCE writing the GED tests, how do you feel that the high school equivalency diploma has helped you? **(MARK AS MANY AS APPLY)**

The high school equivalency diploma has:

○ helped me to get a job
○ helped me to get a job promotion
○ helped me to keep my present job
○ helped me to get a raise
○ made no difference to my job situation
○ helped me to be accepted to an on-the-job training or apprenticeship program
○ helped me to be accepted by an educational institution
○ made no difference to my educational opportunities
○ not helped me in any way
○ provided me with other benefits **(PLEASE EXPLAIN)**

____

7. Did you study for the GED tests?

○ NO **(GO TO QUESTION 9)**
○ YES

8. What courses did you take or materials did you study before you wrote the GED tests? **(MARK AS MANY AS APPLY)**

○ GED courses offered by Alberta Vocational Centres
○ GED sample exams
○ other courses or materials **(PLEASE EXPLAIN)**

____

Section II: The GED and Employment

9. What was your employment status when you wrote the GED? **(MARK ONLY ONE)**

○ employed full-time FOR PAY **(GO TO QUESTION 10)**
○ employed part-time FOR PAY **(GO TO QUESTION 10)**
○ unemployed and not looking for work **(GO TO QUESTION 11)**
○ unemployed but looking for work **(GO TO QUESTION 11)**
○ other **(PLEASE EXPLAIN)**

____
(GO TO QUESTION 11)

10. Did your employer know you were taking the GED tests?

○ YES
○ NO

11. What is your employment status at the present time? **(MARK ONLY ONE)**

○ employed full-time FOR PAY **(GO TO QUESTION 12)**
○ employed part-time FOR PAY **(GO TO QUESTION 12)**
○ unemployed and not looking for work **(GO TO QUESTION 13)**
○ unemployed but trying to find work **(GO TO QUESTION 13)**
○ other **(PLEASE EXPLAIN)**

____
(GO TO QUESTION 13)

12. Does your present employer know you have taken the GED Tests?

○ YES
○ NO

Section III: The GED and Further Education

13. SINCE taking the GED tests, have you been accepted for admission to any educational institution or job training programs? **(MARK AS MANY AS APPLY)**

○ YES, at a community college
○ YES, by an educational consortium
○ YES, at a university
○ YES, at a technical school such as NAIT or SAIT
○ YES, at an apprenticeship or on-the-job training program
○ NO, but I have applied for admission **(GO TO QUESTION 15)**
○ NO, and I have not applied for admission **(GO TO QUESTION 15)**

14. Are you currently a student? **(MARK ONLY ONE)**

○ YES, a full-time student
○ YES, a part-time student
○ NO, but I was a student at some time since I wrote the GED tests
○ NO, I have not participated in any educational or training programs since I wrote the GED tests

Section IV: Your Background

15. In what year were you born? 19 __ __

16. What is your sex?

○ MALE
○ FEMALE

17. When did you write the GED tests?

MONTH: ______________ YEAR: 19 __ __

18. What was the highest grade that you completed PRIOR to writing the GED tests?

○ less than grade 6
○ grade 7
○ grade 8
○ grade 9
○ grade 10
○ grade 11
○ grade 12

19. What other training have you successfully completed? **(PLEASE SPECIFY)**

____

____

____

20. SINCE writing the GED tests, has your income (before deductions) increased, decreased, or remained about the same? **(MARK ONLY ONE)**

○ increased
○ decreased **(GO TO QUESTION 22)**
○ remained the same **(GO TO QUESTION 22)**

21. Why has your income increased since you wrote the GED tests? **(PLEASE EXPLAIN)**

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SECTION V: YOUR COMMENTS

22. Please share any opinions or comments that you have regarding the GED tests or the Alberta High School Equivalency Program. If you wish, indicate any impact that the program has had on your life.

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Thank you for taking the time to participate in this survey. Your comments and opinions will be helpful in this review of the Alberta High School Equivalency Program.

PLEASE RETURN THE QUESTIONNAIRE USING THE ENCLOSED ENVELOPE BY MAY 31, 1984

APPENDIX D

QUESTIONNAIRE - FORM B

ALBERTA HIGH SCHOOL EQUIVALENCY PROGRAM STUDY

QUESTIONNAIRE

Directions

Most of the questions in this survey provide you with a number of possible choices. Please answer these questions by marking an (x) in the circle provided next to the answer you think is most appropriate.

Example

Have you received an Alberta High School Equivalency Diploma?

⊗ YES
○ NO

For other questions you will be asked to write your answers. Please write neatly in the spaces provided.

Begin with question 1 and read through the questionnaire until you reach the end. You may not have to answer all of the questions, however. Be sure to follow the directions that are given throughout the questionnaire. These directions will lead you to questions that are appropriate for you to answer based on your previous responses.

Section I: You and the Equivalency Diploma

1. How did you hear about the Alberta High School Equivalency Program? **(MARK AS MANY AS APPLY)**

○ through a friend or relative
○ through my employer
○ from an employment counsellor
○ from an employee of an Alberta Vocational Centre
○ from another source **(PLEASE EXPLAIN)**

____

2. Why did you apply for an equivalency diploma? **(MARK AS MANY AS APPLY)**

○ to improve my educational opportunities
○ to improve my chances of being promoted in my job
○ to improve my chances of getting a better job
○ for personal reasons **(PLEASE EXPLAIN)**

____

3. Who encouraged you to apply for an equivalency diploma?
(MARK AS MANY AS APPLY)

○ my employer
○ my spouse
○ an employment counsellor
○ a friend or relative
○ no one encouraged me to apply
○ other **(PLEASE EXPLAIN)**

____

4. BEFORE applying for an equivalency diploma, how did you expect that a high school equivalency diploma would help you?
(MARK AS MANY AS APPLY)

I expected the equivalency diploma would:

○ improve my chances for getting a job
○ improve my chances for getting a promotion
○ help me to keep my present job
○ help me to get a raise
○ make no difference to my job
○ help me to be admitted to an on-the-job training or apprenticeship program
○ help me to be admitted to an educational institution
○ make no difference to my educational opportunities
○ not help me in any way
○ help me in a personal way **(PLEASE EXPLAIN)**

____

5. SINCE receiving an equivalency diploma, how do you feel that the high school equivalency diploma has helped you?
(MARK AS MANY AS APPLY)

The high school equivalency diploma has:

○ helped me to get a job
○ helped me to get a job promotion
○ helped me to keep my present job
○ helped me to get a raise
○ made no difference to my job situation
○ helped me to be accepted to an on-the-job training or apprenticeship program
○ helped me to be accepted by an educational institution
○ made no difference to my educational opportunities
○ not helped me in any way
○ provided me with other benefits **(PLEASE EXPLAIN)**

____

Section II: The High School Equivalency Diploma and Employment

6. What was your employment status when you applied for an equivalency diploma? **(MARK ONLY ONE)**

○ employed full-time FOR PAY **(GO TO QUESTION 7)**
○ employed part-time FOR PAY **(GO TO QUESTION 7)**
○ unemployed and not looking for work **(GO TO QUESTION 8)**
○ unemployed but looking for work **(GO TO QUESTION 8)**
○ other **(PLEASE EXPLAIN)**

____
(GO TO QUESTION 8)

7. Did your employer know you were applying for an equivalency diploma?

○ YES
○ NO

8. What is your employment status at the present time? **(MARK ONLY ONE)**

○ employed full-time FOR PAY **(GO TO QUESTION 9)**
○ employed part-time FOR PAY **(GO TO QUESTION 9)**
○ unemployed and not looking for work **(GO TO QUESTION 10)**
○ unemployed but trying to find work **(GO TO QUESTION 10)**
○ other **(PLEASE EXPLAIN)**

____
(GO TO QUESTION 10)

9. Does your present employer know you have an equivalency diploma?

○ YES
○ NO

Section III: The High School Equivalency Diploma and Further Education

10. SINCE receiving an equivalency diploma, have you been accepted for admission to any educational institution or job training programs? **(MARK AS MANY AS APPLY)**

○ YES, at a community college
○ YES, by an educational consortium
○ YES, at a university
○ YES, at a technical school such as NAIT or SAIT
○ YES, at an apprenticeship or on-the-job training program
○ NO, but I have applied for admission **(GO TO QUESTION 12)**
○ NO, and I have not applied for admission **(GO TO QUESTION 12)**

11. Are you currently a student? **(MARK ONLY ONE)**

○ YES, a full-time student
○ YES, a part-time student
○ NO, but I was a student at some time since receiving an equivalency diploma
○ NO, I have not participated in any educational or training programs since I receiving an equivalency diploma

Section IV: Your Background

12. In what year were you born? 19 __ __

13. What is your sex?

○ MALE
○ FEMALE

14. When did you receive your equivalency diploma?

MONTH: ______________ YEAR: 19 __ __

15. What was the highest grade that you completed BEFORE receiving your equivalency diploma?

○ less than grade 6
○ grade 7
○ grade 8
○ grade 9
○ grade 10
○ grade 11
○ grade 12

16. What other training have you successfully completed? **(PLEASE SPECIFY)**

____

____

____

17. SINCE receiving an equivalency diploma, has your income (before deductions) increased, decreased, or remained about the same? **(MARK ONLY ONE)**

○ increased
○ decreased **(GO TO QUESTION 19)**
○ remained the same **(GO TO QUESTION 19)**

18. Why has your income increased since you received an equivalency diploma? **(PLEASE EXPLAIN)**

____

____

____

SECTION V: YOUR COMMENTS

19. Please share any opinions or comments that you have regarding the Alberta High School Equivalency Program. If you wish, indicate an impact that the program has had on your life.

Thank you for taking the time to participate in this survey. Your comments and opinions will be helpful in this review of the Alberta High School Equivalency Program.

PLEASE RETURN THE QUESTIONNAIRE USING THE ENCLOSED ENVELOPE BY MAY 31, 1984

APPENDIX E

COVERING LETTER FOR QUESTIONNAIRE

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY
FACULTY OF EDUCATION
THE UNIVERSITY OF ALBERTA

April 19, 1984

Dear :

Under the sponsorship of Alberta Education, I am currently conducting a study related to the Alberta High School Equivalency Program. The purpose of the study is to determine the educational and employment-related benefits that you may have received as a result of your participation in the equivalency program.

To assist me in this study, I would ask that you please complete the enclosed questionnaire and return it in the envelope provided. It should take about 10 to 15 minutes of your time. Your answers and opinions will be very valuable in my attempt to determine how the equivalency program has affected those who have participated in it. As it is only possible to survey a small number of applicants to the equivalency program, it is very important that you answer each question as accurately as you can. The information you provide will remain strictly confidential. Your completed questionnaire will be analyzed and destroyed when the study is finished.

If you have any questions about the survey please call me at 433-0461 (weekdays 8 a.m. to 6 p.m.). Please return the questionnaire before **MAY 31, 1984.** The questionnaires have been numbered so that I may send you a reminder if your response has not been received by that date.

Thank you for your time and co-operation in completing and mailing the questionnaire.

Sincerely,

Barry Carbol

enclosure

6-102 EDUCATION NORTH, EDMONTON, ALBERTA, CANADA • T6G 2G5 • TELEPHONE (403) 432-5245

APPENDIX F

INTERVIEW/SURVEY QUESTIONS FOR REGISTRARS OF POST-SECONDARY INSTITUTIONS

ALBERTA HIGH SCHOOL EQUIVALENCY PROGRAM STUDY
EDUCATIONAL INSTITUTIONS/PROGRAMS SURVEY

DIRECTIONS

Most of the questions in this survey require that you write your response in the space provided. If additional space other than that give below each question is required, please write your answer on a separate sheet and attach it to the survey.

Other questions require that you select your answer from a number of possible choices. Please answer these questions by marking an (x) in the circle provided next to the answer you think is appropriate.

Respond only to those questions that you feel are appropriate for your institution. Please indicate why a given question does not apply to your institution.

Thank you for taking time to complete this survey.

NAME OF YOUR INSTITUTION:__________________________________

QUESTION 1:

What is your institution's policy concerning the admission of adult students?

QUESTION 2:

The Alberta High School Equivalency Program offers adults not possessing a high school diploma with the opportunity to acquire one. Adults may receive an equivalency diploma either through the writing of a battery of tests called the Tests of General Educational Development (GED) or through a departmental evaluation of a number of educationally-relevant criteria that they may possess.

Does your institution have a policy concerning the admission of adults who have an Alberta High School Equivalency Diploma?

○ NO **(GO TO QUESTION 3)**

○ YES

What is your institution's admission policy with respect to adults with equivalency diplomas?

QUESTION 3:

Does your institution require a high school diploma for admission to any of the programs that it offers?

○ NO **(GO TO QUESTION 4)**

○ YES

Which programs require a high school diploma for admission?

QUESTION 4:

For applicants possessing a high school diploma, are additional qualifications (educational or experiential) required by your institution before they are admitted to one of your programs?

○ NO **(GO TO QUESTION 5)**

○ YES

What additional qualifications are required?

____

____

____

QUESTION 5:

In general, does your institution prefer its applicants to possess a regular high school diploma rather than an equivalency diploma?

○ THE REGULAR HIGH SCHOOL DIPLOMA IS PREFERED

○ THE EQUIVALENCY DIPLOMA IS PREFERED

○ BOTH CREDENTIALS ARE ACCEPTABLE FOR ADMISSION

○ NEITHER CREDENTIAL IS ACCEPTABLE FOR ADMISSION

(PLEASE EXPLAIN YOUR ANSWER)

____

____

____

____

QUESTION 6:

How many applicants with Alberta High School Equivalency Diplomas have you accepted into programs at your institution?

# of applicants accepted:____________

(IF NONE GO TO QUESTION 8)

QUESTION 7:

In any of the cases noted in question 6 was the fact that the applicant possessed an equivalency diploma an important factor in the admission process?

○ NO **(GO TO QUESTION 8)**

○ YES **(PLEASE SPECIFY THE NUMBER OF CASES)** ____________

QUESTION 8:

What is your opinion concerning the value of a high school credential?

____

____

____

____

QUESTION 9:

What additional comments (if any) would you like to make regarding the Alberta High School Equivalency Program?

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THANK YOU FOR YOUR TIME AND CO-OPERATION IN COMPLETING AND MAILING THIS SURVEY. PLEASE RETURN THE SURVEY TO B. CARBOL, DEPARTMENT OF EDUCATIONAL PSYCHOLOGY, 6-102 EDUCATION NORTH, UNIVERSITY OF ALBERTA, EDMONTON, ALBERTA T6G 2G5 BY **MAY 31, 1984.**

APPENDIX G

LETTER TO EMPLOYERS

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY
FACULTY OF EDUCATION
THE UNIVERSITY OF ALBERTA

March 21, 1984

Dear :

Under the sponsorship of Alberta Education, I am currently conducting a study related to the Alberta High School Equivalency Program. The overall purpose of the study is to evaluate the equivalency program. In this regard, it is important to determine the educational and employment-related benefits that graduates may have received as a result of their participation in the equivalency program.

As I indicated in our telephone conversation, I would appreciate the opportunity to meet with you in the near future to discuss the personnel policies of your firm regarding high school credentials. Any information that you offer will be kept strictly confidential. It is my intent to report the results related to employment benefits of equivalency diplomas in a general fashion. The names of specific firms will not be reported without the prior written consent of the firm.

Generally, the types of questions that I will ask relate to the educational requirements of positions with _______________, hiring policy guidelines regarding educational qualifications, and your opinions about high school credentials. In some instances, written policy statements or other materials may provide the answers to the questions that I will ask. I would also like to find out whether your firm has hired any individuals who have an Alberta High School Equivalency Diploma. The interview should take about one-half hour of your time.

If you have any questions concerning the study, I can be reached at 433-0461. Thank you for considering this request for an interview. Your assistance is very much appreciated.

Sincerely,

Barry Carbol

6-102 EDUCATION NORTH, EDMONTON, ALBERTA, CANADA • T6G 2G5 • TELEPHONE (403) 432-5245

APPENDIX H

EMPLOYER INTERVIEW SCHEDULE

EMPLOYER INTERVIEW SCHEDULE

EMPLOYER: ____________________ CONTACT PERSON: ______________________

PHONE: _____________ POSITION: ______________________

INTERVIEW DATE: __________ , 1984 EMPLOYER GROUP: __ general __ other

DIRECTIONS: Mark an (x) in the circle next to the appropriate response for each question.

QUESTIONS:

1. Have you heard about the Alberta High School Equivalency Program?

○ YES
○ NO (Interviewer explains program features) **(go to question 3)**

2. Do you know what the program is about?

○ YES
○ NO (Interviewer explains program features)

3. In terms of the educational requirements of jobs with your company, what percentage of the jobs require:

○ LESS THAN A HIGH SCHOOL DIPLOMA ___ %

What kinds of jobs are these?

____

____

○ A HIGH SCHOOL DIPLOMA ___ %

What kinds of jobs are these?

____

____

○ APPRENTICESHIP TRAINING ___ %

What kinds of jobs are these?

____

____

○ COMMUNITY COLLEGE OR TECHNICAL SCHOOL TRAINING ____ %

What kinds of jobs are these?

____

____

○ UNIVERSITY TRAINING ____ %

What kinds of jobs are these?

____

____

4. Please outline the hiring policies of your company as these relate to educational qualifications.

____

____

____

____

____

5. Do you require job applicants to present proof of their educational qualifications?

○ YES
○ NO

6. For those jobs that require a high school diploma but no other training, does your company prefer a job applicant to have a regular high school diploma rather than a high school equivalency diploma?

○ YES

WHY?

____

____

○ NO

WHY?

____

____

7. Two job applicants are equal in every way including the amount and kind of job experience they possess. You must make a decision about which one to hire. One applicant has a regular high school diploma, the other an equivalency diploma. Which person would you prefer to hire?

○ THE REGULAR HIGH SCHOOL GRADUATE

○ THE HIGH SCHOOL EQUIVALENCY GRADUATE

○ EITHER WOULD BE ACCEPTABLE

8. An employee with your firm acquires a high school equivalency diploma. With your company, could the acquisition of this diploma result in the employee receiving:

a job promotion

○ YES

○ NO

WHY?

____

____

a raise

○ YES

○ NO

____

____

9. Are you aware of any employees who work for your firm who have earned a high school equivalency diploma?

○ YES

Could you please indicate approximately how many would fit into this category?

____

○ NO

10. Have you hired any individuals who have an equivalency diploma?

○ YES

How many have you hired?

____

○ NO

11. What additional comments would you like to make regarding the high school diploma in general or the Alberta High School Equivalency Program?

____

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THANK YOU FOR YOUR ASSISTANCE. THE INFORMATION YOU HAVE PROVIDED WILL BE HELPFUL IN DETERMINING THE UTILITY OF THE EQUIVALENCY PROGRAM.

APPENDIX I

SUMMARY OF QUESTIONNAIRE RESPONSES

QUESTIONNAIRE SUMMARY

KEY: GEDs = successful GED GEDns = non-successful GED n-GED = non-GED

1. What did you think of the GED tests?

	GEDs	GEDns	n-GED
too easy	8 (7.1)	2 (2.6)	NA
too hard	3 (2.7)	6 (7.8)	NA
about right	70(61.9)	40(51.9)	NA
a fair indication of knowledge & skills	67(59.3)	34(44.2)	NA
other	7 (6.2)	7 (9.1)	NA

2. How did you hear about the program?

	GEDs	GEDns	n-GED
friend or relative	56(49.6)	33(42.9)	57(42.9)
employer	7 (6.2)	2 (2.6)	5 (3.8)
employment counsellor	10 (8.8)	6 (7.8)	4 (3.0)
AVC employee	12(10.6)	15(19.5)	13 (9.8)
other (usually the newspaper or Bulletin)	37(32.7)	24(31.2)	67(50.4)

3. Why did you write the GED tests/apply to the equivalency program?

	GEDs	GEDns	n-GED
improve educational opportunities	55(48.7)	34(44.2)	73(54.9)
improve chances for job promotion	12(10.6)	8(10.4)	22(16.5)
improve chances of getting a better job	54(47.8)	39(50.6)	60(45.1)
see if I could pass the tests	61(54.0)	39(50.6)	NA
for personal reasons	26(23.0)	14(18.2)	65(48.9)

4. Who encouraged you to write/apply?

	GEDs	GEDns	n-GED
employer	4 (3.5)	3 (3.9)	6 (4.5)
spouse	31(27.4)	14(18.2)	30(22.6)
employment counsellor	8 (7.1)	5 (6.5)	2 (1.5)
a friend or relative	26(23.0)	18(23.4)	28(21.1)
no one	59(52.2)	37(48.1)	77(57.9)
other	15(13.3)	6 (7.8)	18(13.5)

	GEDs	GEDns	n-GED
5. BEFORE writing/applying, how did you expect the equivalency diploma would help you?			
improve chances of getting a job	49(43.4)	41(53.2)	44(33.1)
improve chances for promotion	17(15.0)	13(16.9)	28(21.1)
help to keep present job	6 (5.3)	1 (1.3)	10 (7.5)
help to get a raise	5 (4.4)	0 (0.0)	4 (3.0)
make no difference to job	23(20.4)	6 (7.8)	30(22.6)
admission to apprenticeship program	15(13.3)	22(28.6)	24(18.0)
admission to educational institution	43(38.1)	31(40.3)	50(37.6)
no difference to ed. opportunities	5 (4.4)	4 (5.2)	5 (3.8)
not help in any way	2 (1.8)	0 (0.0)	6 (4.5)
help in a personal way	45(39.8)	25(32.5)	39(29.3)
6. SINCE writing/applying, how do you feel the equivalency diploma has helped you?			
helped me to get a job	12(10.6)	3 (3.9)	11 (8.3)
helped me to get a promotion	5 (4.4)	1 (1.3)	5 (3.8)
helped me to keep present job	5 (4.4)	2 (2.6)	4 (3.0)
helped me to get a raise	5 (4.4)	1 (1.3)	4 (3.0)
made no difference to my job	52(46.0)	26(33.8)	46(34.6)
acceptance to apprenticeship program	2 (1.8)	1 (1.3)	5 (3.8)
acceptance by an educational inst.	14(12.4)	9(11.7)	21(15.8)
no difference to ed. opportunities	13(11.5)	12(15.6)	8 (6.0)
not help in any way	24(21.2)	30(39.0)	26(19.5)
provided me with other benefits	27(52.2)	5 (6.5)	30(22.6)
7. Did you study for the GED tests?	59(52.2)	43(55.8)	NA
8. What courses did you take/materials did you study before writing the GED tests?			
GED courses offered by AVCs	9	8	NA
GED sample exams	46	28	NA
other courses/materials	16	10	NA

	GEDs	GEDns	n-GED
9. Employment status PRIOR to writing/ applying			
employed full-time for pay	60(53.1)	28(36.4)	73(54.9)
employed part-time for pay	15(13.3)	9(11.7)	14(10.5)
unemp and not looking	9 (8.0)	12(15.6)	12 (9.0)
unemp but looking	18(15.9)	18(23.4)	24(18.0)
other	10 (8.8)	10(13.0)	10 (7.5)
no response	1 (0.9)		
10. Employer know you were taking the GED tests/applying for an equivalency diploma?	48	17	37
11. PRESENT employment status			
employed full-time for pay	66(58.4)	33(42.9)	77(57.9)
employed part-time for pay	14(12.4)	6 (7.8)	17(12.8)
unemp and not looking	3 (2.7)	5 (6.5)	9 (6.8)
unemp but looking	17(15.0)	25(32.5)	18(13.5)
other	11 (9.7)	8(10.4)	11 (8.3)
no response	2 (1.8)		1 (0.8)
12. Employer know you have taken the GED tests/ received an equivalency diploma?	48	17	37
13. Acceptance to educational institutions/ on-the-job training programs			
community college	6 (5.3)	9(11.7)	13 (9.8)
educational consortium	2 (1.8)	1 (1.3)	2 (1.5)
university	8 (7.1)	0 (0.0)	9 (6.8)
technical school	8 (7.1)	1 (1.3)	7 (5.3)
apprenticeship program	7 (6.2)	1 (1.3)	7 (5.3)
no acceptance but have applied	6 (5.3)	9(11.7)	7 (5.3)
have not applied for admission	78(69.0)	51(66.2)	88(66.2)
14. Present student status			
full-time student	6 (5.3)	5 (6.5)	7 (5.3)
part-time student	7 (6.2)	1 (1.3)	18(13.5)
not now but was a student since applying to the program	10 (8.8)	5 (6.5)	4 (3.0)
no participation in educational programs	4 (3.5)	1 (1.3)	4 (3.0)
NA	86(76.1)	65(84.4)	98(73.7)

15. Age

	GEDs	GEDns	n-GED
19-25	29	52	35
26-30	25	14	37
31-40	35	16	45
41-50	18	6	13
51-60	5	1	3
over 60	1	0	0
Mean Age	32.7	28.3	31.6

16. Sex

Male	53(46.9)	36(46.8)	65(48.9)
Female	60(53.1)	41(53.2)	68(51.1)

17. Time since writing/applying

less than 6 months	20	27	66
6 - 12 months	31	16	49
13 - 18 months	18	15	18
19 - 24 months	21	7	0
25 months or more	23	12	0

18. Highest grade completed prior to writing GED tests or applying to the program

less than grade 6	1 (0.9)	0 (0.0)	0 (0.0)
grade 7	0 (0.0)	3 (3.9)	0 (0.0)
grade 8	6 (5.3)	9(11.7)	1 (0.8)
grade 9	28(24.8)	25(32.5)	2 (1.5)
grade 10	38(33.6)	16(20.8)	12 (9.0)
grade 11	33(29.2)	15(19.5)	63(47.4)
grade 12	7 (6.2)	9(11.7)	55(41.4)
Mean grade level	10	9.8	11.3

19. Other training

none	85(75.2)	71(92.2)	87(65.4)
some post-secondary	28(24.8)	6 (7.8)	46(34.6)

20. Change in income since writing the GED tests/applying to the program

	GEDs	GEDns	n-GED
no response	12(10.6)	10(13.0)	15(11.3)
increase	43(38.1)	9(11.7)	34(25.6)
decrease	7 (6.2)	7 (9.1)	8 (6.0)
no change	51(45.1)	51(66.2)	76(57.1)

21. Reasons for increase in income

no reason given	4 (9.3)	0 (0.0)	4(11.8)
annual raise	18(41.9)	5(55.6)	19(55.9)
new/better job	17(39.5)	3(33.3)	9(26.5)
equivalency diploma	3 (7.0)	1(11.1)	2 (5.9)
two jobs	1 (2.3)	0 (0.0)	0 (0.0)

22. Comments

no comment	18(15.9)	35(45.5)	33(24.8)
personal satisfaction	20(17.7)	1 (1.3)	27(20.3)
increased self-conf.	11 (9.7)	4 (5.2)	4 (3.0)
greater self-esteem	9 (8.0)	0 (0.0)	4 (3.0)
valuable program	34(30.1)	16(20.8)	43(32.3)
program not helpful	10 (8.8)	5 (6.5)	10 (7.5)
need more advertising	0 (0.0)	2 (2.6)	3 (2.3)
other negative	6 (5.3)	10 (12.0)	4 (3.0)
other positive	5 (4.4)	4 (5.2)	3 (2.3)

APPENDIX J

ANOVA SUMMARY TABLE FOR THE AGE VARIABLE

One-way Analysis of Variance of Age for
Three Equivalency Program Groups

Source	SS	df	MS	F	p
Between groups	925.4	2	462.7	6.42	0.0019
Within groups	23080.2	320	72.1		

APPENDIX K

ANOVA SUMMARY TABLE FOR THE HIGHEST-GRADE-COMPLETED VARIABLE

One-way Analysis of Variance of Highest-grade-completed for Three Equivalency Program Groups

Source	SS	df	MS	F	p
Between groups	147.0	2	73.52	69.71	<0.001
Within groups	337.5	320	1.05		

APPENDIX L

SUMMARY OF NON-SIGNIFICANT RELATIONSHIPS - ANALYSES OF CONTINGENCY TABLES

Variables	df	n	χ^2	p
A. Highest-grade-completed by sex	6	323	9.25	0.16
B. Reasons for writing/applying by sex				
1. Improve educational opportunities	1	323	0.027	0.87
2. Improve chances for promotion	1	323	0.450	0.50
3. Improve chances of getting a better job	1	323	0.000	0.99
C. Time since writing/applying by acceptance at an educational inst.	4	323	6.15	0.19
D. Time since writing/applying by help in getting a job	4	323	7.82	0.10
E. Expectation of improved chances of getting a job and perceived help in getting a job (non-successful GED group only)	1	77	0.000	0.99
F. Highest-grade-completed by acceptance at an educational inst.	6	323	7.91	0.25
G. Highest-grade-completed by reasons for writing				
1. Improve educational opportunities	6	323	2.20	0.90
2. Improve chances for promotion	6	323	3.57	0.74
3. Improve chances of getting a better job	6	323	3.88	0.69